

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: John B. Harley and Judith A. James

1/12/99  
#19(CNE) T. Gray

Serial No: 08/781,296

Examiner: M. Zeman

Filing date: January 13, 1997

Art Unit: 1643

For: "Diagnostics and Therapy of Epstein-Barr Virus in Autoimmune Disorders"

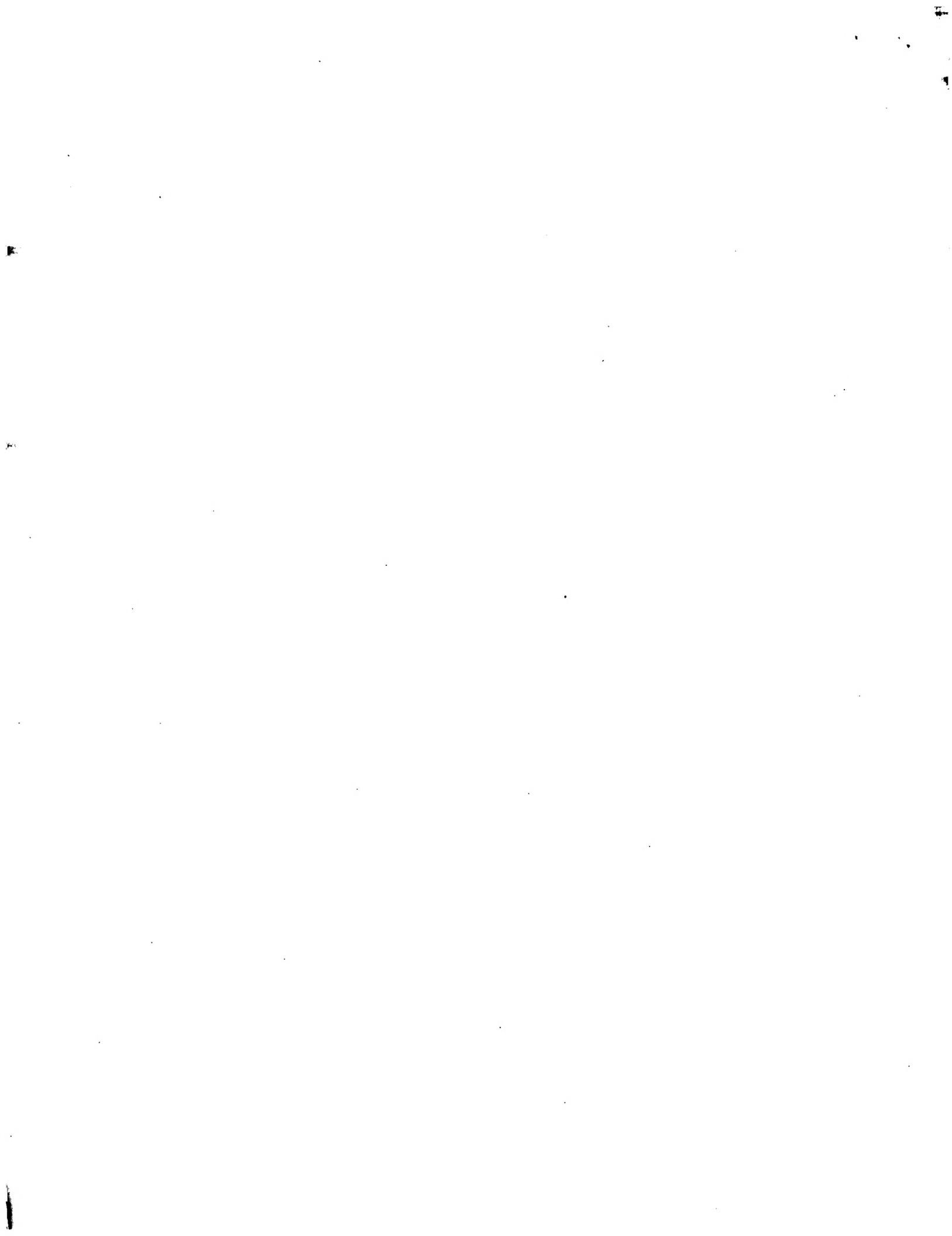
Assistant Commissioner of Patents  
Washington, D.C. 20231

**DECLARATION UNDER 37 C.F.R. §1.132 OF DR. JOHN HARLEY**

Sir:

I, John B. Harley, hereby declare that:

1. I am an inventor of the subject matter described and claimed in the above-identified patent application.
2. I received my B.S. in Physics and Chemistry from Dickinson College, Carlisle, Pennsylvania in 1971. I received my Ph.D. in Biochemistry from the University of Pennsylvania, Philadelphia, Pennsylvania, in 1976. I received my M.D. from the University of Pennsylvania, Philadelphia, Pennsylvania in 1974. I am Board Certified as a Diplomat of the American Board of Internal Medicine, American Board of Rheumatology and the American Board of Allergy and Immunology. I am currently the James R. McElroy Professor of Immunology and Professor of Medicine, Adjunct Professor Department of Microbiology and Adjunct Professor Department of Pathology at the University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma; A Member, Arthritis and Immunology Program, Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma. My Curriculum Vitae is attached. We have conducted



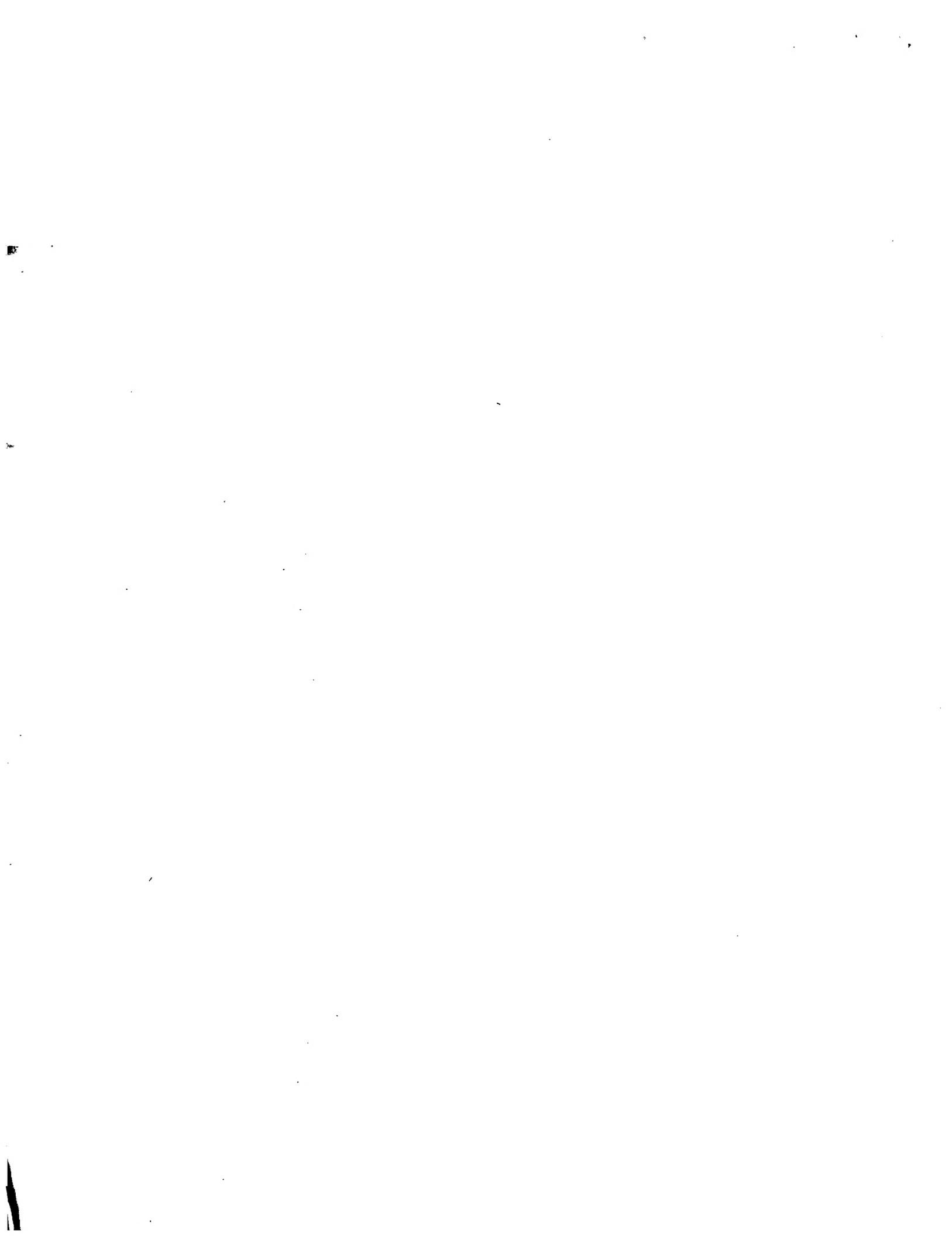
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additional studies which show an association between Epstein-Barr virus and another autoimmune disorder, inflammatory polyarthritis.

To preliminarily address the issue of association we obtained sera from some of the cases and controls in the Norfolk Arthritis Register. This is an RA disease inception study where all of the available patients in this region of England with inflammatory polyarthritis were enrolled as close to presentation as was possible along with appropriate controls. The overwhelming majority of these cases satisfy the 1987 Classification Criteria for RA. Our collaborator in this effort, Professor Alan Silman, has sent us 174 blinded sera from this resource collected at enrollment interview of patients with polyarthritis, thought to be typical for the presentation of RA, and controls. We assayed these blinded serum specimens for anti-EBV VCA IgG (Epstein-Barr virus Viral Capsid Antigen), anti-CMV IgG (cytomegalovirus), anti-HSV-1 IgG (herpes simplex virus, type 1), and anti-HSV-2 IgG (herpes simplex virus, type 2), using the methods described in our patent application.



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**Table 1. Preliminary association of anti-EBV VCA IgG with inflammatory polyarthritis with sera from the Norfolk Arthritis Register.**

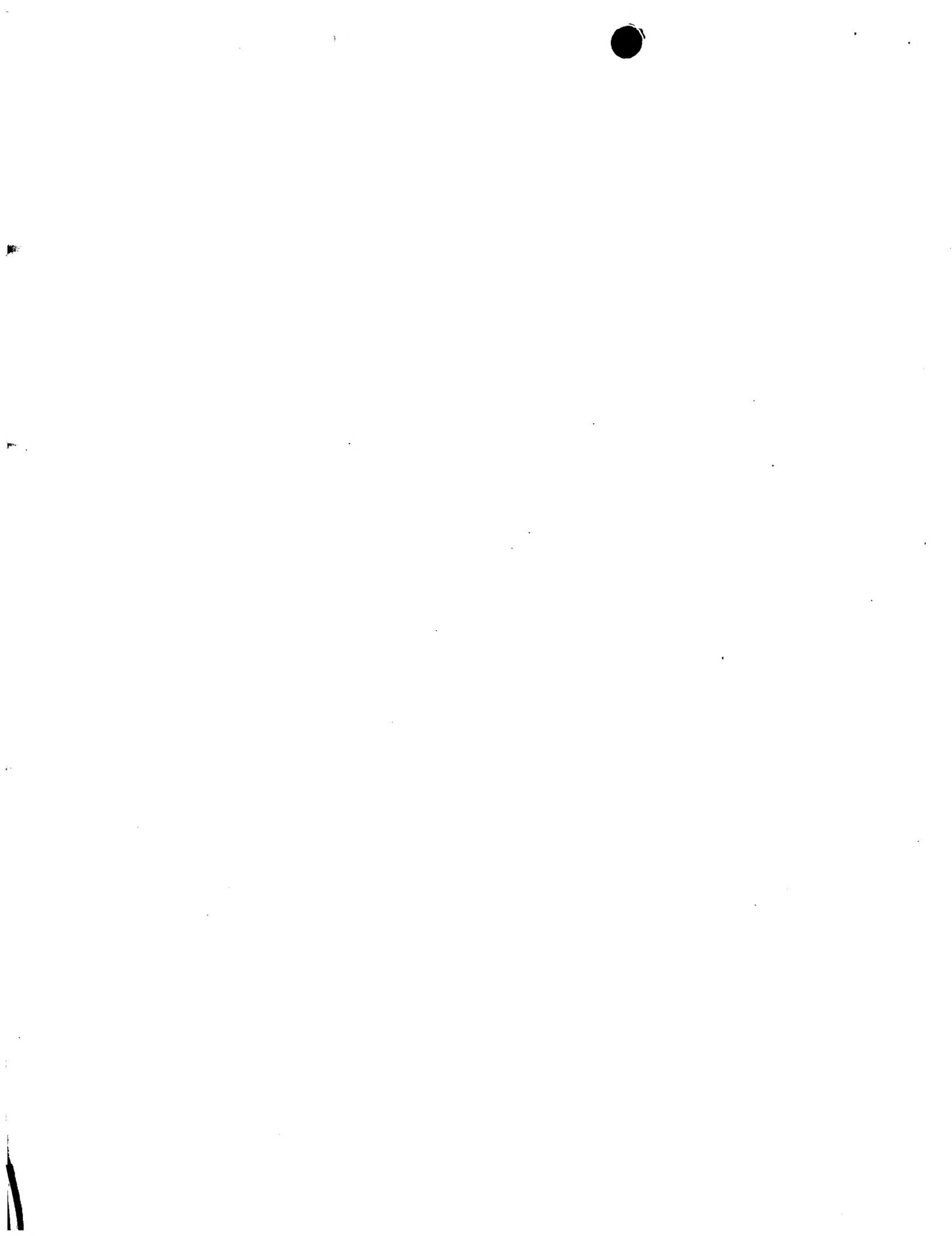
	Anti-EBV-VCA IgG		Anti-CMV IgG		Anti-HSV-1 IgG		Anti-HSV-2 IgG	
	+	-	+	-	+	-	+	-
RA	78	2	30	50	41	39	26	65
Controls	78	13	40	51	46	45	23	57
Odds Ratio	6.5		0.8		1.0		1.0	
$\chi^2$		7.4		0.7		0.0		0.0
P value		<0.01		NS		NS		NS

NS=not significant. Analysis is done by the McNemar test.

Upon receipt of the anti-viral assay results in Manchester the code was broken and the analysis is proceeding in both centers. The results show support for association of EBV seropositivity just after presentation with inflammatory polyarthritis.

There is no obvious association of inflammatory arthritis with seropositivity against HSV-1, HSV-2 or CMV. There is however, a strong but not perfect association of anti-EBV IgG with the cases. While significant, these numbers are small and warrant being established in a group of sufficient size to more accurately estimate the odds ratio and to explore the RA patients who are seronegative with regard to EBV.

One of the possible artifacts is that something about RA generates false positives in the anti-EBV VCA IgG assay. The obvious candidate for such nefarious interference is rheumatoid factor (RF). Data in the literature supports there being no interference between the anti-EBV VCA IgG and RF. Nevertheless, we have explored this issue by removing approximately 90% of the RF activity by solid phase absorption with human IgG from four RA patients who were RF seropositive and from two RF negative control sera. The anti-EBV VCA IgG decreased by averages of 21% in the RF positive RA sera and 27% in the RF negative control sera. In no RA case nor control did the serologic status of anti-EBV-VCA IgG change



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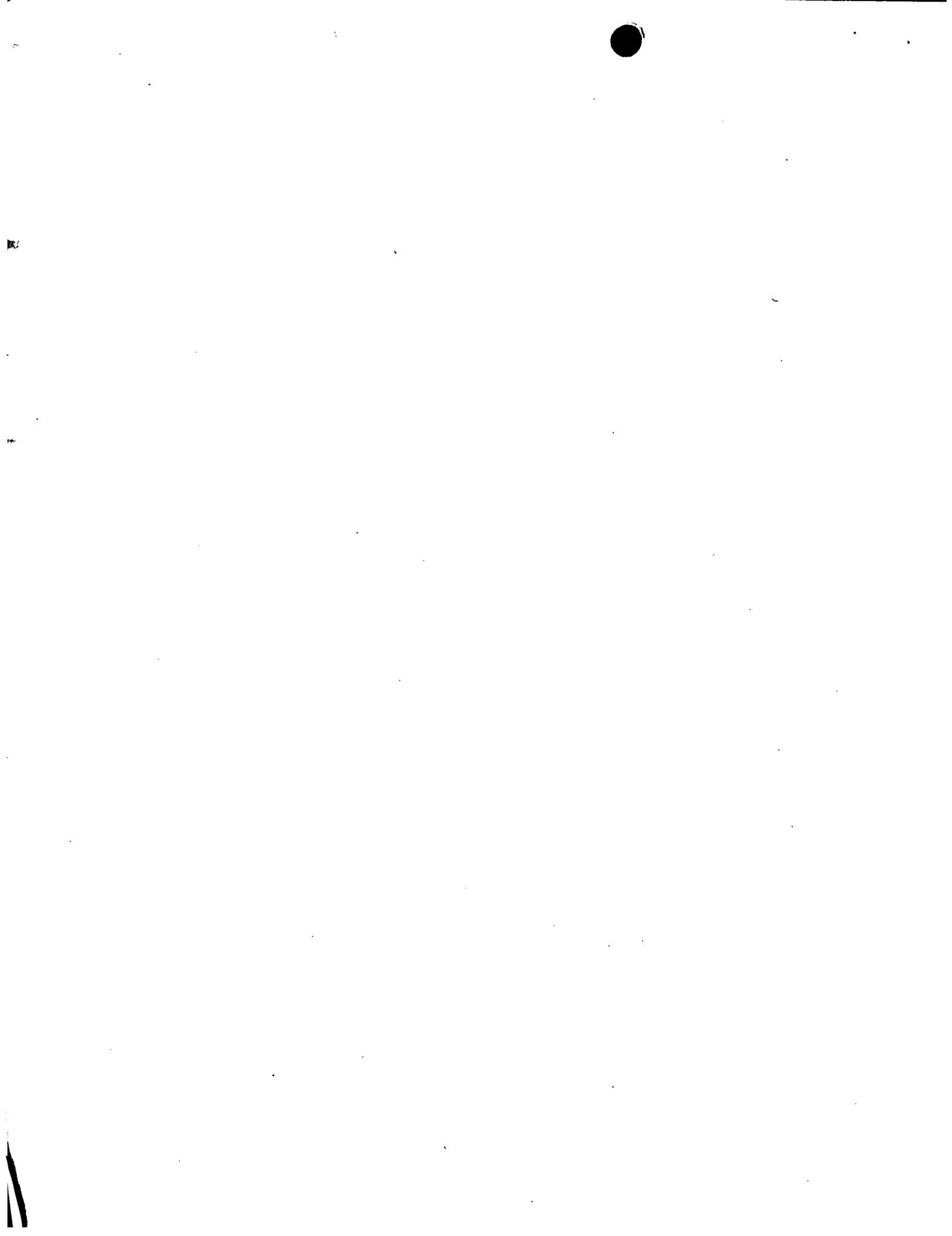
from positive to negative (or vice versa). The simultaneous reduction in the antibody titer against a control antigen (varicella zoster) was exactly the same, 21% and 27%, respectively. By our data and the experience in the literature we are led to the conclusion that RF does not interfere with the anti-EBV-VCA IgG assay.

4. We also have preliminary data in RAA with EBNA-1. We have constructed the 443 unique overlapping octapeptides from EBNA-1 used to analyze the specificity of response in sera from patients with lupus, as described in our patent applications, but have used them to evaluate the fine specificity of the anti-EBNA-1 IgG antibody response in an RA patient and a normal control (Figure 1). There are 641 amino acids in the sequence, but some are repetitive and therefore were made only once. This approach has been applied in a number of other studies from our laboratory.

Figure 1 shows the binding of a rheumatoid factor positive RA patient serum (A) and a sex, race and age matched negative control (B) to the 443 unique overlapping octapeptides of EBNA-1. The RA patient mounts a very diversified response against EBNA-1. The normal control, on the other hand, has a much more limited response. Note the apparently identical responses binding peptides near peptide number 210 and 260 in both the normal and the RA patient. Meanwhile, the RA patient has anti-EBNA-1 antibodies against a number of peptides not bound by the normal. Among these are octapeptides numbered 244 to 347 (↓) which contain RLPFG which is crossreactive with collagen.

Many more of the EBNA-1 derived peptides are bound by the RA patient than are bound by the control. At the same time the RA patient binds all of those bound by the control. These results are, perhaps, consistent with the much higher frequency of precipitins against EBNA-1 in RA found in the precipitin studies in the literature relative to those results being immunofluorescence.

These data present the opportunity to define aspects of the fine specificity of the RA anti-EBV B cell response which are qualitatively unique to RA. Note that the RA patient binds all of the peptides bound by the matched control. In addition, there are a number of regions (octapeptides numbered 25 to 75, and those near 175, 275, 320, 345, 360, 385, 390, 410 and 420)

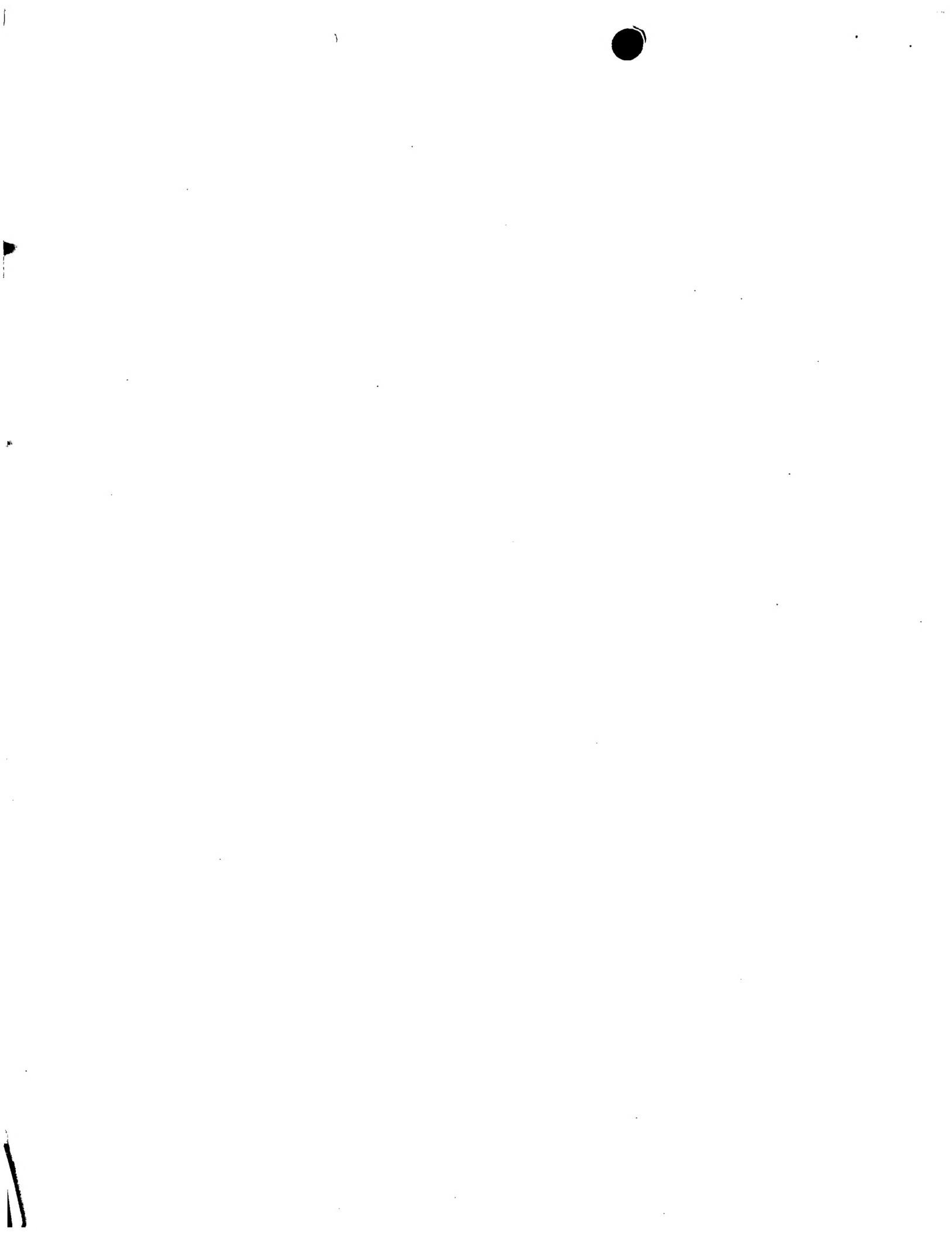


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which are bound by the RA patient serum and not by the normal control. After collecting data from a number of such pairs and other inflammatory disease controls we could identify those relatively specific for RA. Interestingly, Octapeptides numbered 344 to 347 contain RLPFG which has shown to be immunologically crossreactive with collagen and is, therefore, a strong candidate for being a relatively RA specific anti-EBV response

5. The literature and our data as presented above leads us to suspect that the following model or scenario concerning RA is true. Because of genetic factors (e.g. HLA-DR4) some individuals have increased risk of becoming affected with RA. Some RA patients have an abortive infection of their synovium with EBV. These elements then are responsible for or predictive of the following: an association of EBV with RA (Table 6), humoral immune abnormalities in RA directed against EBV (Table 6), the relative absence of specific anti-EBV T cell activity in the peripheral blood (failure to suppress transformed B cell outgrowth) of RA patients, and the concentration of anti-EBV early antigen T cell activity in RA synovium of some patients.

6. The Examiner has requested data showing that one can prevent or alleviate symptoms of autoimmune disorders using our claimed compositions. This data in human is not currently available. However, studies have been conducted, as described in our application that show that certain peptide sequences present in EBV peptides can induce autoimmune disease. We have also conducted studies showing that we can induce tolerance to these same peptides, so that autoimmune disease is not induced.



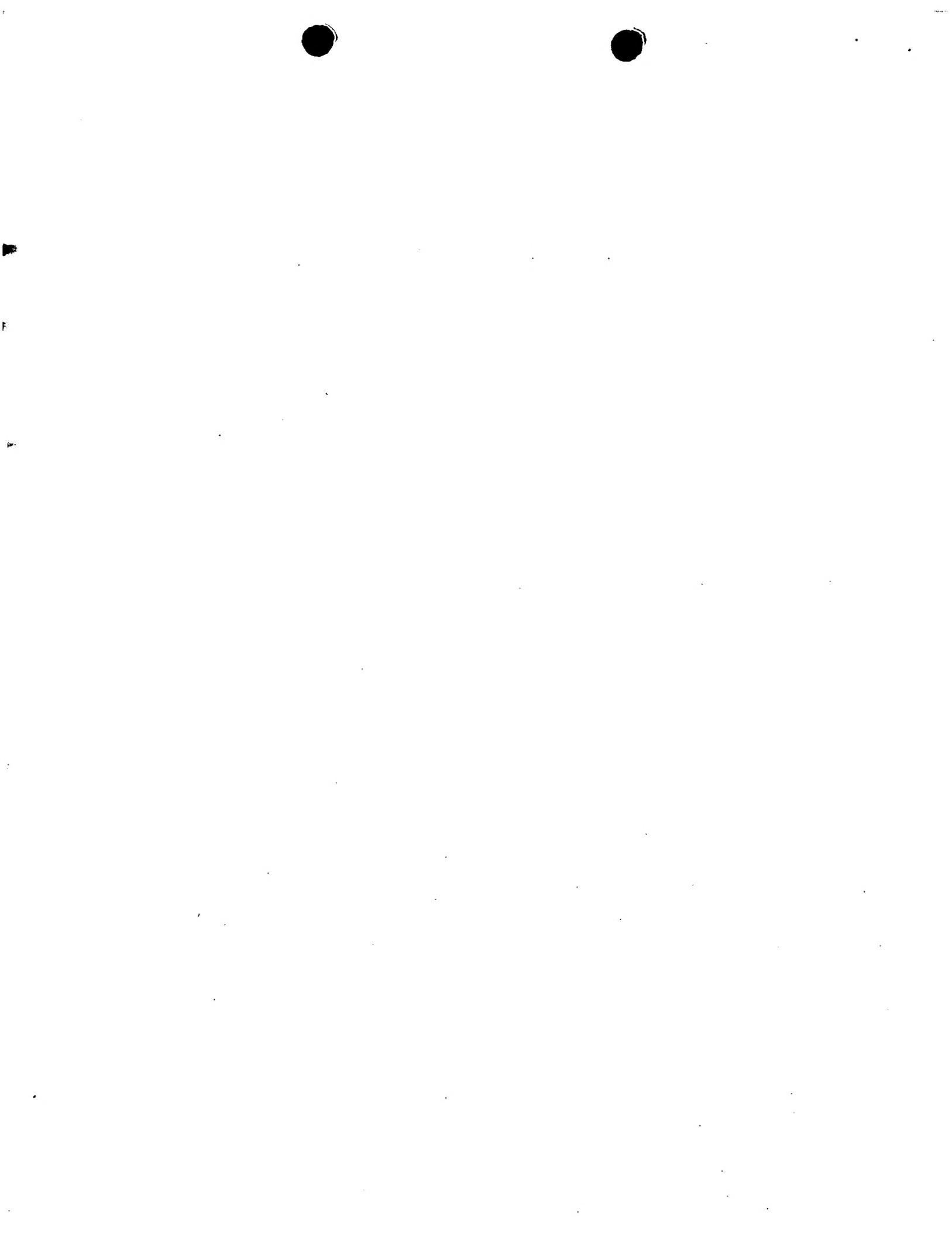
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7. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements are made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: \_\_\_\_\_

John B. Harley





## CURRICULUM VITAE

John B. Harley, M.D., Ph.D.

### Personal Data

Date of Birth: September 13, 1949

Married: Barbara West on August 8, 1972

Children: Andrew West Harley, September 5, 1979  
Isaac Thomas West Harley, January 2, 1982

### Education

1976	Ph.D.	University of Pennsylvania, Philadelphia, Pennsylvania (Biochemistry)
1974	M.D.	University of Pennsylvania, Philadelphia, Pennsylvania
1971	B.S.	Dickinson College, Carlisle, Pennsylvania (Physics and Chemistry)

### Professional Experience

1982 - Present	James R. McEldowney Professor of Immunology and Professor of Medicine (1992 to present), Associate Professor (1986 to 1992), Assistant Professor (1982 to 1986), Department of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma
1982 - Present	Member (1998 to present) Associate Member (1989 to present), Affiliated Associate Member (1986 to 1989), Affiliated Assistant Member (1982 to 1986), Arthritis and Immunology Program, Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma
1983 - Present	Adjunct Professor (1992 to present), Adjunct Associate Professor (1988 to 1992), Adjunct Assistant Professor (1983 to 1988), Department of Microbiology, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma
1996 - Present	Adjunct Professor, Department of Pathology, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma
1982 - Present	Staff Physician (1982, 1984 to 1987 and 1992 to present), Clinical Investigator (1987 to 1992), Immunology Section, Medical Service, Veterans Administration Medical Center, Oklahoma City, Oklahoma
1981 - 1982	Postdoctoral Fellow in Rheumatology, Arthritis Branch, National Institute of Arthritis, Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, Maryland

- 1979 - 1982      Clinical Associate, Laboratory of Immunoregulation, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland
- 1977 - 1979      Intern and Resident in Internal Medicine, Yale University, New Haven, Connecticut
- 1976 - 1977      Postdoctoral Fellow, Department of Tumor Immunology, Imperial Cancer Research Fund Laboratories, London, England
- 1975 - 1977      Postdoctoral Fellowship from the National Institute of Allergy and Infectious Diseases with Departments of Microbiology, Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, Pennsylvania
- 1974              Assistantship in Physiology, University of Pennsylvania  
                    Philadelphia, Pennsylvania
- 1970              Co-Director, Halfway House, Dauphin County Unit, Harrisburg State Hospital, Harrisburg, Pennsylvania

Military Service

- July 1, 1979 -  
June 30, 1982      Active Duty, Public Health Service:  
                    Senior Assistant Surgeon (03), July 1, 1979;  
                    Surgeon (04), February 1, 1980

Board Certification

- 1979              Diplomate of the American Board of Internal Medicine  
1982              Diplomate of the American Board of Rheumatology  
1983              Diplomate of the American Board of Allergy and Immunology

Scientific Recognition

- Landis-Mohler Prize in Physics (1968)  
A. J. Carnell Fellowship, Medicine (1972)  
Edgar J. Kaufman Fellowship, Biochemistry (1973)  
Balduin-Lucke Award in Medical Research (1974)  
Arthritis Investigator Award, Arthritis Foundation (1985)  
Young Investigator Award, National Institutes of Health (1985)  
Arthritis Foundation Travel Award (1986)  
Appointed by Governor George Nigh to the Oklahoma Health Research Committee (1986)  
Alumni Research Scholar, University of Oklahoma College of Medicine (1987)  
Clinical Investigator Award, Veterans Administration (1987)  
Recognition of Outstanding Contribution, Faculty Senate, University of Oklahoma Health Sciences Center (1988)  
Provost Research Award, University of Oklahoma Health Sciences Center (1988)  
ASHI Scholar Award, American Society Histocompatibility and Immunogenetics (1989)

Prix de la Meilleuve Communication Scientifique, Premieres Journees Bretonnes D'Autoimmune (1990, shared with L. Jacobsson, B. Hansen, K. Hardgrave and R. Manthorpe)  
Howard and Martha Holley Research Prize, American College of Rheumatology and the University of Alabama in Birmingham (1991)  
James R. McEldowney Professorship in Immunology, University of Oklahoma (1992)  
Wallace Graham Lecturer, University of Ottawa (1992)  
Philip Hench Award, Association of Military Surgeons of the United States (1996)

Professional Societies

American Federation for Medical Research (1980)  
American Rheumatism Association (1983)  
Oklahoma Academy of Science (1983)  
Oklahoma Rheumatism Society (1983)  
American Association of Immunologists (1984)  
American Society for Histocompatibility and Immunogenetics (1987)  
Central Society for Clinical Investigation (1987)  
Oklahoma Allergy Society (1988)  
American Society for Clinical Investigation (1990)  
American Association for the Advancement of Science (1991)  
American Society for Human Genetics (1993)  
Clinical Immunology Society (1995)

Institutional Duties

Fleming Scholar Committee, Oklahoma Medical Research Foundation, Chairman (1983-1986); Member (1983-present)  
Electron Paramagnetic Resonance Facility Committee, Oklahoma Medical Research Foundation, Member (1985-1989)  
Pharmacy and Therapeutics Committee, Oklahoma Memorial Hospital, Member (1983-1991); Chairman (1984-1989)  
University Council on Faculty Awards and Honors, University of Oklahoma (1988-1991)  
Oklahoma Medical Research Foundation Lecture Series Committee, Member (1989-1991)  
MD/PhD Program, College of Medicine, University of Oklahoma, Director (1989-present), MD/PhD Advisory Committee (1989-present)  
Department of Medicine Executive Committee, Member representing Associate Professors (1989-1991) and Professors (1993-1995)  
Honorary Degree Screening Committee, University of Oklahoma, Member (1990-1993)  
Center for Molecular Medicine, University of Oklahoma, Member (1991-)  
Search Committee, Associate Chief of Staff for Research, Department of Veterans Affairs Medical Center, Member (1991-1992).  
Search Committee for Gammill Chair in Polycystic Kidney Disease, Member (1996-1997)

Professional Service

American Federation of Clinical Research, Senator representing the University of Oklahoma (1983-1986)  
Scientific Advisory Committee, Oklahoma Lupus Association, Member (1986-)

Rheumatology Abstract Review Committee, American Federation for Clinical Research, Member (1986)

National Subcommittee for Chapter Grant Review, Arthritis Foundation, Member (1985-1987). Lupus Council, Arthritis Foundation, Member (1986-1990)

Oklahoma Health Research Committee, Member (1986-1995, Appointee of Governor George Nigh); Chairman (1986-1995)

Humoral Immunology Abstract Review Committee, American Rheumatism Association, Member (1987-1988)

Ad hoc Site-Visit Review Group, National Institute of Arthritis and Musculoskeletal and Skin Disease, Member (1987)

N.A.T.O. Collaborative Research Program, Collaborators on Complete Congenital Heart Block, Coordinator (1986-1988)

Scientific Review Committee, Presbyterian Health Foundation, Approved But Not Funded Program, Member (1988-1989)

Centers of Excellence Planning Committee, OCAST, Substitute Member (1988)

Two to Grow On, Executive Committee, Member (1988, Appointee of Governor Henry Bellmon) By-Laws Committee for the Professional Practice Plan, Chairman (1988)

Systemic Lupus Erythematosus Etiology and Pathogenesis, Abstract Review Committee, American College of Rheumatology, Member (1989-1992)

Autoimmunity Minisymposium, Federation of the American Societies of Experimental Biology, American Association of Immunologists, Chairman (1990)

Editorial Board, Arthritis and Rheumatism (1990-1993)

Arthritis Research Council Special Site Visit Review Committee, National Institute for Arthritis and Musculoskeletal Diseases, Member (1990)

AFCR, ASCI, AAP National Meeting, Abstract Selection Committee, Chairman for Rheumatology (1991)

Editorial Board, Clinical and Experimental Rheumatology (1991-1994)

Program Specialist, Merit Review Board in Immunology, Research Services, U.S. Department of Veterans Affairs (1991-1994 and 1994-1997)

Reviewer's Reserve, National Institutes of Health, member (1992-1993)

General Medicine A Study Section, Division of Research Grants, National Institute of Health, ad hoc member (1992)

Specialized Centers of Research in Rheumatoid Arthritis Study Section, National Institute for Arthritis, Musculoskeletal and Skin Disease, Member (1992)

Experimental Immunology Study Section for Request for Applications "The effects of silicone on the immune response and in autoimmunity", Division of Research Grants, National Institutes of Health, Member (1993)

General Medicine A-2 Ad Hoc Review Section (AHR-M2), National Institutes of Health, Member (1993)

General Medicine A Study Section, Division of Research Grants, National Institutes of Health, Member (1993-1997)

Internal Administrative Advisor to "Sensory Integration Relevant to Cardiopulmonary Function" a Program Project proposal, Robert D. Foreman, Principal Investigator (1994)

Lupus Foundation of America, Medical Council, Member (1994-1996)

Clinical Sciences Special Emphasis Panel, National Institutes of Health, Member (1994)

Special Review Committee, National Institutes of Arthritis, Musculoskeletal and Skin Disease, Chairman (1995)

Oklahoma Center for the Advancement of Science and Technology (OCAST), Member of the Board of Directors (1995-present; Appointee of Governor Frank Keating); Vice Chairman (1995-1996 and 1996-1997)  
American Association of Immunologists, Member of the Public Affairs Committee (1996-Present)  
Ad hoc Technical Evaluation Group for RFP NIH-NIAMS-96-001, "Gene Therapy for Rheumatic and Skin Diseases", National Institute of Arthritis, Musculoskeletal and Skin Diseases, Chairman (1996)  
University of Michigan Lupus SCOR, Member, Scientific and Administrative Advisory Committee (1997 - present)  
NIAID Task Force on Immunology, Member (1997-1998)  
Clinical Infrastructure Task Force, S.L.E. Foundation (1998-present)

Attending Physician

Oklahoma Memorial Hospital, Oklahoma City  
U.S. Department of Veterans Affairs Medical Center, Oklahoma City  
Oklahoma Children's Memorial Hospital, Oklahoma City

Supervision of Students and Postdoctoral Fellows

Ph.D. Candidates

Mark J. Mamula	Ph.D.	1986	The role of the Ro/SSA ribonucleoprotein Microbiology as an immunogen: A study of the antigen binding properties
Myra O. Rosario	Ph.D.	1987	Studies on the immunology of the human Microbiology ribonucleoprotein autoantigen Ro/SSA
Kimberley K. Gaither	Ph.D.	1987	Anti-Ro/SSA in normal sera and its role Microbiology in the pathogenesis of neonatal lupus syndrome (R.A. Patnode Award, Sigma Xi Award)
Charles A. O'Brien	Ph.D.	1990	A subset of hY RNAs are associated with Microbiology erythrocyte Ro RNPs and the sequence of hY4 RNA (Sigma Xi Award)
Judith A. James	Ph.D.	1993	Sequential fine specificity of Sm and nRNP associated proteins
A. Darise Farris	Ph.D.	1995	Phylogenetic analysis of Ro ribonucleoprotein associated small RNAs
Kathy L. Moser	Ph.D.	1995	Genetic linkage analysis of chromosome 1 marker loci to systemic lupus erythematosus and anti-nuclear antibodies.
Melissa Arbuckle			Dissertation research underway

Summer Student Research Scholars

Michael D. Rader	1983	Sir Alexander Fleming Scholar
Andrea L. Sestak	1984	Sir Alexander Fleming Scholar
Ann J. Althizer	1985	Sir Alexander Fleming Scholar
E. Michele Southard	1986	Sir Alexander Fleming Scholar
Dedra Butler	1987	Sir Alexander Fleming Scholar
Julie Cleek	1988	OMRF Scholar

Judith Ann James	1988	Sir Alexander Fleming Scholar
Grace Yin Jenq	1989	Sir Alexander Fleming Scholar
Cy Anderson	1989	SURE Program Scholar
Holly Moreu	1990	Sir Alexander Fleming Scholar
David Stec	1990	SURE Program Scholar
Juliet von Egmond	1991	SURE Program Scholar
Kennith Layton	1991	Sir Alexander Fleming Scholar
W. Cody Holloway	1992	Sir Alexander Fleming Scholar
Tina Grover	1992	Presbyterian Harris Summer Fellow
Lee Warren	1992	Presbyterian Harris Summer Fellow
Melissa Arbuckle	1993	SURE Program Scholar
Monica S. Reid	1993	Sir Alexander Fleming Scholar
Rivka Galchen	1994	Sir Alexander Fleming Scholar
Robert Clay Musser	1994	Sir Alexander Fleming Scholar
Lydia D. Nightingale	1995	Sir Alexander Fleming Scholar
Micah T. McClain	1995	Sir Alexander Fleming Scholar
Audrey Brumback	1995, 1996	Summer Student
Rivka Galchen	1995	Summer Student
Connie Zhai	1995	Summer Student
Lydia Nightingale	1996, 1997, 1998	Summer Student
Teresa Hall	1996	Summer Student
Mark Goodman	1996	Summer Student
Jared Ning	1996, 1997	Summer Student
Jenifer Hahn	1996	Summer Student
Micah Mc Clain	1996	Summer Student
David Williams	1996	Summer Student
Alyssa Shilling	1997	Sir Alexander Fleming Scholar
Alan Lee	1997	Summer Student
Nelson Fong	1997, 1998	Summer Student
Anup Shetty	1998	Sir Alexander Fleming Scholar

Postdoctoral Fellows, Rheumatology Clinical Fellows and Research Scientists

Owen F. Fox, Ph.D.	1983-1987
Larry G. Willis, M.D.	1985-1986
Dan Axthelm, M.D.	1986-1987
Atsushi Fujisaku, M.D., Ph.D.	1986-1989
Kimberley K. Gaither, Ph.D.	1987-1988
W. Daryl Dickey, M.D., Ph.D.	1988-1991
R. Hal Scofield, M.D.	1988-1991
Bettina Mues, M.D., Ph.D.	1989-1990
Jose Troncoso, M.D.	1989-1991
Shu-Cai Huang, Ph.D.	1991-1993
Timothy Shaver, M.D.	1993-1994
Sangita Deveshwar, M.D.	1993-1995
Judith A. James, M.D., Ph.D.	1993-1995
Kenneth M. Kaufman, Ph.D.	1994-present
A. Darise Farris, Ph.D.	1995-1996

**Curriculum Vitae**  
**John B. Harley, M.D., Ph.D.**

Kathy L. Moser, Ph.D.	1995-present
Iman Ali, M.D.	1997-present
Andrea Sestak, M.D., Ph.D.	1997-present

**Faculty Support**

Shaili Deveshwar, M.D.	1995-1996	Assistant Professor Department of Pediatrics University of Oklahoma
Kenneth M. Kaufman, Ph.D.	1994-present	Research Assistant Professor Department of Medicine University of Oklahoma
Judith A. James, M.D., Ph.D.	1995-present	Research Assistant Professor Department of Medicine University of Oklahoma
Barbara R. Neas, Ph.D.	1991-present	Assistant Professor Department of Biostatistics and Epidemiology University of Oklahoma
R. Hal Scofield, M.D.	1991-present	Assistant Professor Department of Medicine University of Oklahoma
	1991-present	Associate Member (1992-present), Assistant Member (1991-1992), Oklahoma Medical Research Foundation

**Sabbatical and Visiting Scientists**

Angela Horsfall, Ph.D.	1989-1990	Senior Scientist; Kennedy Institute for Rheumatology, London
Fanny Ebling, Ph.D.	1991	Associate Professor; Department of Medicine, University of California, Los Angeles
Jacob Karsh, M.D.	1992	Associate Professor; Department of Medicine, University of Ottawa, Ontario
Thomas Gordon, M.D.	1995-1996	Associate Professor; Department of Medicine, Flinders University Adelaide, Australia

Curriculum Vitae  
John B. Harley, M.D., Ph.D.

Ramnath Misra, M.D.	1997	WHO Fellow Additional Professor Department of Clinical Immunology Sanjoy Gandi Postgraduate Institute of the Medical Sciences Lucknow, India
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Research Support

Active Research Support

National Institutes of Health T32 AI07364-01 to 05  
“Molecular Pathogenesis Training Program”  
Principal Investigator: John Iandolo, Ph.D.  
Training Personnel: J.B. Harley  
2% time and effort  
2/1/98 to 1/31/03: \$111,568 total direct costs  
2/1/98 to 1/31/99: \$ 69,304 direct costs

National Institutes of Health T32 AR07580  
“Immunological Training in Rheumatology and Dermatology”  
Principal Investigator: M. Reichlin  
Training Personnel: J.B. Harley  
1% time and effort  
7/1/94 to 6/30/99: \$ 328,900 total direct costs  
7/1/98 to 6/30/99: \$ 65,520 direct costs

U.S. Department of Veterans Affairs, Merit Review Program, CC103  
“Anti-Ro Autoantibody”  
Principal Investigator: J.B. Harley  
10% time and effort  
10/1/94 - 9/30/99: \$465,500 total direct costs  
10/1/98 - 9/30/99: \$ 93,100 direct costs

National Institutes of Health, Contract No. N01-AR-5-2221  
“Lupus Multiplex Registry and Repository”  
Principal Investigator: J.B. Harley  
up to 20% time and effort  
9/30/95 - 9/29/01: \$3,641,507 total costs  
9/30/98 - 9/29/99: \$ 674,714 direct costs

National Institutes of Health K08 AR01981-01 to 05  
“Genetic Analysis of Lupus Autoimmunity”  
Principal Investigator: Judith A. James, M.D., Ph.D.  
Mentor: J.B. Harley  
9/30/96 - 8/31/01: \$378,722 total direct costs  
9/30/98 - 8/31/99: \$ 71,460 direct costs

National Institute of Health R01 AI31584-04  
“A Possible Infectious Etiology for Lupus”  
Principal Investigator: J.B. Harley  
4% time and effort  
9/1/97 - 8/31/02: \$864,935 total direct costs  
9/1/97 - 8/31/98: \$168,833 first year direct costs

National Institute of Health P50 AR45231-01  
“Specialized Center of Research in Systemic Lupus Erythematosus”  
Projects #2. “Multiplex and Simplex Pedigrees in the Genetics of Lupus”  
Principal Investigator: Robert P. Kimberly, M.D.  
Project #2 Investigator: J.B. Harley  
20% time and effort  
7/1/98 - 6/30/02: \$600,000 total direct costs  
7/1/98 - 6/30/99: \$150,000 direct costs

Pending Research Support

National Institutes of Health RO1 AR42474-06 to 10  
“Epstein-Barr Virus in Lupus”  
Principal Investigator: J.B. Harley  
2/1/99 - 1/31/04: \$1,006,331 total requested direct costs  
2/1/99 - 1/31/00: \$185,796 requested direct costs

National Institutes of Health RO1 AR42460-06 to 10  
“Genetic Association with Lupus in American Blacks”  
Principal Investigator: J.B. Harley  
4/1/99 - 3/31/04: \$2,026,214  
4/1/99 - 3/31/00: \$351,272

National Institutes of Health R03  
“Epistasis With A Gene Near D1s229 In Lupus”  
Principal Investigator: J.B. Harley  
12/1/98 - 11/30/02: \$150,000 total requested direct costs  
12/1/98 - 11/30/99: \$ 50,000 requested direct costs

Arthritis Foundation  
“Epistasis with D1s229 in Lupus”  
Principal Investigator: J.B. Harley  
7/1/99 - 6/30/04: \$416,665 total requested direct costs  
7/1/99 - 6/30/00: \$ 83,333 requested direct costs

U.S. Department of Veterans Affairs  
“Research Enhancement Award”  
Principal Investigator: J.B. Harley  
1/1/99 - 6/30/99: \$ 40,000 direct costs

Previous Research Support

**U.S. Department of Veterans Affairs**  
**"VAMC Genotyping and Sequencing Center"**  
**Principal Investigator: J.B. Harley**  
**7/20/98 - 9/30/98: 465,760**

**U.S. Department of Veterans Affairs**  
**"Medical Research Service Equipment Request"**  
**Principal Investigator: J.B. Harley**  
**7/1/98 - 9/30/98: \$67,000**

**National Institutes of Health R01 AI24717-07 to 11**  
**"Genetic Linkage in Lupus"**  
**Principal Investigator: J.B. Harley**  
**9/30/93 to 8/31/98: \$537,746**

**National Institutes of Health R01 AR42474**  
**RFA AR-93-005 "Research on Causal Mechanisms in Systemic Lupus Erythematosus"**  
**"Peptides Induce Lupus Autoimmunity"**  
**Principal Investigator: J.B. Harley**  
**9/30/93 to 8/31/98: \$547,843**

**National Institutes of Health**  
**"Genetic Linkage in Lupus Research Supplement for a Minority Postdoctoral Trainee"**  
**Principal Investigator: J.B. Harley**  
**10/1/95 - 8/31/98: \$117,630**

**National Institute of Health T32 GM08237-08 to 10**  
**"Septic Shock And Tissue Injury"**  
**Principal Investigator: Gary T. Kinasewitz, M.D.**  
**Training Personnel: J.B. Harley**  
**7/1/96 to 6/30/97 \$69,100**  
**7/1/97 to 6/30/98 \$72,000 total direct costs**

**National Institutes of Health R01 AR42460**  
**RFA AR-93-006 "Systemic Lupus in Women and Minorities"**  
**"A Genetic Association with Lupus in American Blacks"**  
**Principal Investigator: J.B. Harley**  
**9/30/93 to 5/31/98: \$504,504 total direct costs**

**National Institutes of Health T32 AI07364-01 to 05**  
**"Molecular Pathogenesis Training Program"**  
**Principal Investigator: Joseph J. Ferretti, Ph.D.**  
**Training Personnel: J.B. Harley**  
**2/1/93 to 1/31/98: \$226,994**

**National Institutes of Health K11 AR01844**  
**Physician Scientist Award**  
**"Origin of Anti-Ro/SSA Antibody"**

Curriculum Vitae  
John B. Harley, M.D., Ph.D.

Principal Investigator: Robert Hal Scofield, M.D.  
Sponsor: J.B. Harley  
3/1/92 to 2/28/97: \$335,000

National Institutes of Health R01 AR42474-S1  
Research Supplement for Minority Investigators  
"Peptides Induce Lupus Autoimmunity"  
Principal Investigator: J.B. Harley  
Co-Principal Investigator: J.A. James  
2/1/95 to 1/31/97: \$134,610

National Institutes of Health F31 GM14841  
"MARC Predoctoral Fellowship"  
Judith A. James, Fellowship Recipient  
John B. Harley M.D., Ph.D., Sponsor  
10/1/91 to 9/30/96: \$81,800

National Institutes of Health R01 AI31584  
"Y RNA Sequences and Ro RNP Function"  
Principal Investigator: J.B. Harley  
7/1/91 to 6/30/96: \$155,655

U.S. Department of Veterans Affairs, Merit Review Program CC103  
"Human Anti-Ro/SSA Producing Xenografts"  
Principal Investigator: J.B. Harley  
10/1/91 to 9/30/94: \$173,794

National Institutes of Health, Program Project, P01 AI21568-06 to 08  
"Autoantibodies in SLE and Polymyositis"  
Program Director: Morris Reichlin, M.D.  
9/1/90 to 6/30/94: \$1,253,561 total approved direct costs

Core C  
"Experimental Design and Statistical Analysis"  
Principal Investigator: J.B. Harley  
9/1/90 to 7/31/94: \$39,599  
Project 3  
"Autoantigenicity of Sm and nRNP"  
Principal Investigator: J.B. Harley  
9/1/90 to 7/31/94: \$221,829

Presbyterian Health Foundation  
MD/PhD Program  
Principal Investigator: J.B. Harley  
11/1/92 to 10/30/93: \$104,000 approved direct costs

National Institute of Health, R01 AI24717-04 to 06  
"HLA-DQ Gene Complementation in Lupus"  
Principal Investigator: J.B. Harley

Curriculum Vitae  
John B. Harley, M.D., Ph.D.

4/1/90 to 8/31/93: \$241,338

National Institutes of Health, T32 GM08237  
“Septic Shock and Tissue Injury”  
Principal Investigator: Lerner Hinshaw, Ph.D.  
Supporting Investigator: J.B. Harley  
7/1/88 to 6/30/93: \$190,242

National Institutes of Health, R01 AR39577-01 to 03  
“Antiidiotypes in Congenital Heart Block and Neonatal Lupus”  
Principal Investigator: J.B. Harley  
2/1/89 to 3/31/93: \$239,000

Veterans Administration Clinical Investigator Award (CC108)  
“HLA Gene Complementation in Systemic Lupus”  
Principal Investigator: J.B. Harley  
7/1/87 to 3/31/93: \$585,000

Arthritis Foundation, Oklahoma City Chapter  
“Mouse and Rabbit Y RNA Sequences”  
Principal Investigator: J.B. Harley  
11/1/90 to 10/31/91: \$9,260

OCAST Equipment Contract  
“Autoimmune Responses in Polymyositis”  
Principal Investigator: M. Reichlin  
Co-Investigator: J.B. Harley  
9/1/89 to 8/30/90: \$26,177

March of Dimes Birth Defects Foundation (1-1109)  
“Immunopathogenesis of Congenital Heart Block”  
Principal Investigator: J.B. Harley  
7/1/88 to 6/30/90: \$60,000

National Institutes of Health, R01 AI24717  
“HLA Gene Complementation in Primary Sjögren's and Lupus”  
Principal Investigator: J.B. Harley  
Co-Principal Investigator: M. Barton Frank, Ph.D.  
4/1/87 to 6/30/90: \$244,537

Arthritis Foundation - Arthritis Investigator Award  
“Autoimmune Epitopes of Ro/SSA I.”  
Principal Investigator: J.B. Harley  
7/1/85 to 6/30/88: \$108,000

College of Medicine Alumni Research Fund  
“Autoimmune Epitopes of Ro/SSA II.”  
Principal Investigator: J.B. Harley  
7/01/87 to 1/31/89: \$18,296

National Institutes of Health AM34159  
"Immunology of the Autoantigen Ro/SSA and La/SSB"  
Principal Investigator: J.B. Harley  
4/1/85 to 3/31/88: \$ 150,000

National Institutes of Health, AM 34159  
"Immunology of the Autoantigens Ro/SSA and La/SSB"  
Principal Investigator: J.B. Harley  
4/1/85 to 3/30/88: \$107,500

NATO Scientific Affairs Division, RG 86/0564  
Collaborative Research Grant Program RG.86/0564  
"Autoantibodies in Complete Congenital Heart Block"  
Project Coordinator: J.B. Harley  
3/86 to 12/87: \$5,000

Veterans Administration Medical Research Service,  
CC 103 (Merit Review)  
"RNA-Protein in Autoimmune Diseases"  
Principal Investigator: J.B. Harley  
1/1/86 to 12/31/87: \$95,400

March of Dimes Birth Defects Foundation,  
Basil O'Connor Starter Research Grant  
"Anti-Ro/SSA and Congenital Complete Heart Block"  
Principal Investigator: J.B. Harley  
9/1/85 to 8/31/87: \$50,000

National Institutes of Health, R01 DE 06740  
"Human Antibody Responsiveness and Dental Caries"  
Principal Investigator: Martin Levine, Ph.D.  
Co-Investigator: J.B. Harley  
7/1/84 to 6/30/87: \$207,445

Veterans Administration Medical Research Service, CC 103 (RAG)  
"Autoantigen Recovery in Autoimmune Disease"  
Principal Investigator: J.B. Harley  
1/1/85 to 12/31/85: \$25,000

Oklahoma Chapter Arthritis Foundation  
"Monoclonal Antibodies Against Ro/SSA"  
Principal Investigator: J.B. Harley  
7/1/84 to 6/30/85: \$5,500

Oklahoma Lupus Association, Inc.  
"Anti-Ro/SSA Autoantibodies in Normal Individuals"  
Principal Investigator: J.B. Harley  
6/1/84 to 5/31/85: \$3,500

Oklahoma Chapter, Arthritis Foundation  
“Does Epstein-Barr Virus Cause Rheumatoid Arthritis?”  
Principal Investigator: J.B. Harley  
7/1/82 to 6/30/83: \$3,500

Oklahoma Chapter, Arthritis Foundation  
“Immunohistochemical Identification of the Isoenzymes of G6PD”  
Principal Investigator: J.B. Harley  
7/1/82 to 6/30/83: \$8,500

National Institutes of Health, AI 05186  
“Phagocytosis and Lipid Acyl Chain Composition in *Escherichia Coli*?”  
Principal Investigator: J.B. Harley  
7/1/75 to 7/1/77: \$26,000

Patents

U.S. Patent No. 4,784,942 entitled “Monoclonal antibodies against autoimmune RNA proteins,” issued November 15, 1988. Inventor, J.B. Harley

U.S. Patent No. 5,264,351 entitled “Monoclonal antibodies against autoimmune RNA proteins,” issued November 23, 1993. Inventor, J.B. Harley

U.S. Patent No. 5,637,454 entitled “Assays and treatments for autoimmune diseases.” Issued June 10, 1997. Inventor, J.B. Harley [OMRF 114]

U.S. Patent No. 5,719,064 entitled “Peptide diagnostics and therapeutics for spondyloarthropathies”. Issued February 17, 1998. Inventors R.H. Scofield and J.B. Harley.

Continuation in Part U.S. Patent applied for “Assays and treatments for autoimmune diseases.” Provisional U.S. Serial Number: 08/335,198, Unofficial Filing Date April 13, 1992. Inventor, J.B. Harley [OMRF 116 CIP (1)], Notice of allowance issued in October 24, 1996 for claims 1-8, 10, 64-65.

Continuation in Part U.S. Patent applied for “Methods and reagents for diagnosis of autoantibodies.” Provisional U.S. Serial Number: 07/867,819, Unofficial Filing Date June 22, 1992. Inventor, J.B. Harley [OMRF 114 CIP (2)]

U.S. Patent applied for “Peptide diagnostics and therapeutics for spondyloarthropathies.” Provisional U.S. Serial Number: 07/944,143, Unofficial Filing Date August 31, 1992. Inventors, R. Hal Scofield and J.B. Harley [OMRF 138] Patent issued in U.S.A.

Continuation in Part U.S. Patent applied for “Peptide and induction of autoimmunity and clinical symptomology.” Provisional U.S. Serial Number 08/160,604 Unofficial Filing Date, November 30, 1993. Inventors, J.B. Harley, J.A. James and R.H. Scofield [OMRF 114 CIP (3)] \*Applications pending in Europe (93910594.6), Japan (5-518573), Australia (41028193) and Canada (2,117,904).

U.S. Patent applied for "Diagnostics and therapy of Epstein-Barr virus in autoimmune disorders".  
Provisional U.S. Serial Number pending. Inventors, J.B. Harley and J.A. James [OMRF 161]  
Unofficial filing date January 13, 1997.

### Bibliography

#### GenBank Sequence Database Submissions

1. O'Brien, C.A. and J.B. Harley. Human hY4 Ro RNA. Feb. 27, 1991. Accession Number: X57566; Locus: HSHY4RO
2. O'Brien, C.A. and J.B. Harley. H. Sapien (clones B7, B8 and F2) hY4 Ro RNA pseudogenes. Dec. 14, 1992. Accession Numbers: M77130-M77132; Locus: HUMHY4ROA, HUMHY4ROB and HUMHY4ROC.
3. Farris, A.D. and J.B. Harley. Iguana small cytoplasmic RNA (Y3 and Y4). Jan. 11, 1994, Accession Numbers: L27530-L27537; Loci: IGUY3A, IGUY3B, IGUY3C, IGUY3D, IGUY4A, IGUY4B, IGUY4C, IGUY4D. Corrections submitted August 11, 1994.

#### Publications

1. Harley, J.B. Oxygen toxicity and lipid oxidation in *Escherichia coli*. Dissertation, University of Pennsylvania, 1976.
2. Harley, J.B., Grinspan, S. and Root, R.K. Paraquat suicide in a young woman: Results of therapy directed against the superoxide radical. *Yale J. Biol. Med.* 50:481-488, 1977.
3. Harley, J.B., Santangelo, G.M., Rasmussen, H. and Goldfine, H. Dependence of *Escherichia coli* hyperbaric oxygen toxicity on the lipid acyl chain composition. *J. Bacteriol.* 134:808-820, 1978.
4. Goldfine, H., Harley, J.B. and Wyke, J.A. Effects of inhibitors of lipid synthesis on the replication of Rous sarcoma virus. A specific effect of cerulenin on the processing of major non-glycosolated viral structural proteins. *Biochim. Biophys. Acta* 512:229-240, 1978.
5. Harley, J.B. and Goldfine, H. Effects of lipid synthesis on transformation in chicken embryo fibroblasts infected with Rous sarcoma virus. *Exp. Cell Res.* 118:47-54, 1979.
6. Gealy, W.J., Dwyer, J.M. and Harley, J.B. Allelic exclusion of glucose- 6-phosphate dehydrogenase in platelets and T lymphocytes from a Wiskott-Aldrich syndrome carrier. *Lancet* 1:63-65, 1980.
7. Prchal, J.T., Carroll, A.J., Prchal, J.F., Crist, W.M., Skalka, H.W., Gealy, W.J., Harley, J.B. and Mullah, A. Wiskott-Aldrich syndrome: Cellular impairments and their implication for carrier detection. *Blood* 56:1048-1054, 1980.
8. Harley, J.B., Flaks, J.G., Goldfine, H., Bayer, M.E. and Rasmussen, H. Hyperbaric oxygen toxicity and ribosome destruction in *Escherichia coli* K12. *Can. J. Microbiol.* 27:44-51, 1981.

9. Harley, J.B. Clinical manifestations of patients with hypereosinophilic syndrome. In *The Idiopathic Hypereosinophilic Syndrome: Clinical, Pathophysiologic and Therapeutic Considerations* (A.S. Fauci, moderator), pp. 82-84. Ann. Intern. Med. 97:78-92, 1982.
10. Harley, J.B., Fetterolf, C.J., Bello, C.A. and Flaks, J.G. Streptonigrin toxicity in *Escherichia coli*: Oxygen dependence and the role of the intracellular oxidation-reduction state. Can. J. Microbiol. 28:545-552, 1982.
11. Harley, J.B., McIntosh, C.L., Kirklin, J.J.W., Maron, B.J., Gottdiener, J., Roberts, W.C. and Fauci, A.S. Atrioventricular valve replacement in the idiopathic hypereosinophilic syndrome. Am. J. Med. 73:77-81, 1982.
12. Bjornson, B.H., Harley, J.B., Andre-Schwartz, J., Fauci, A.S. and Desforges, J.F. Peripheral blood myeloid progenitor cell cultures in patients with hypereosinophilic syndrome (CFU-eos in hypereosinophilic syndrome). Blood 60:721-726, 1982.
13. Gottdiener, J.S., Maron, B.J., Schooley, R.T., Harley, J.B., Roberts, W.C. and Fauci, A. Two-dimensional echocardiographic assessment of the idiopathic hypereosinophilic syndrome: Anatomic basis of mitral regurgitation and peripheral embolization. Circulation 67:572-578, 1983.
14. Harley, J.B., Fauci, A.S. and Gralnick, H.R. Noncardiovascular findings associated with heart disease in the idiopathic hypereosinophilic syndrome. Am. J. Cardiol. 52:321-324, 1983.
15. Harley, J.B. and Fauci, A.S. Cyclosporine modulates the human in vitro T-dependent antigen-induced synthesis of specific antibody. Transplant. Proc. 15 (Suppl. 1):2315-2320, 1983.
16. Ackerman, S.J., Loegering, D.A., Venge, P., Olsson, I., Harley, J.B., Fauci, A.S. and Gleich, G.J. Distinctive cationic proteins of the human eosinophil granule: Major basic protein, eosinophil cationic protein and eosinophil-derived neurotoxin. J. Immunol. 131:2977-2982, 1983.
17. Foon, K.A., Buescher, S., Kimball, E.S., Huang, L.C., Stevenson, H.C., Clarke, G., Gregorio, T. and Harley, J.B. Monoclonal antibody to human eosinophils recognizing a 95 kD surface membrane antigen. Hybridoma 2:393-1402, 1983.
18. Harley, J.B. and Fauci, A.S.: Therapy in the idiopathic hypereosinophilic syndrome. In *Current Therapy in Hematology/Oncology* (M.C. Brain and P.B. McCulloch, ed.). B.C. Decker, Inc., Burlington, Ontario, pp. 69-71, 1983.
19. Harley, J.B. Idiopathic eosinophilia. Medinews 15(4), March 1983.
20. Henderson, W.R., Harley, J.B. and Fauci, A.S.: Arachidonic acid metabolism in normal and hypereosinophilic syndrome human eosinophils: Generation of leukotrienes B<sub>4</sub>, C<sub>4</sub>, D<sub>4</sub> and 15-lipoxygenase products. Immunology 51:679-686, 1984.
21. Harley, J.B., Yamagata, H. and Reichlin, M. Anti-La/SSB antibody is present in some normal sera and is coincident with anti-Ro/SSA precipitins in systemic lupus erythematosus. J. Rheumatol. 11:309-314, 1984.

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22. Yamagata, H., Harley, J.B. and Reichlin, M. Molecular properties of the Ro/SSA antigen and enzyme-linked immunosorbent assay for quantitation of antibody. *J. Clin. Invest.* 74:625-633, 1990.
23. Reichlin, M. and Harley, J.B. Adaptive immunity. In Pathophysiology: Altered Regulatory Mechanisms in Disease (E.D. Frohlich, ed.), Third Edition. J.B. Lippincott Co., Philadelphia, pp. 839-860, 1984.
24. Reichlin, M. and Harley, J.B. Antibodies to ENA. In Immunopathology of the Skin (E.H. Gottlieb, et al., eds.). Dowden Hutchinson and Ross, Inc., Stroudsburg, PA, 1984.
25. Moore, P.M., Harley, J.B. and Fauci, A.S. Neurologic dysfunction in the idiopathic hypereosinophilic syndrome. *Ann. Intern. Med.* 102:109-114, 1985.
26. Harley, J.B. Autoantibodies in Sjögren's syndrome: Comparison of autoantibody determination methods show that antinuclear antibody and rheumatoid factor are associated with Ro/SSA precipitin formation. *Protides Biol. Fluids Proc. Colloq.* 33:343-346, 1985.
27. Gaither, K.K. and Harley, J.B. Affinity purification and immunoassay of anti-Ro/SSA. *Protides Biol. Fluids Proc. Colloq.* 33:413-416, 1985.
28. Harley, J.B., Rosario, M.O., Yamagata, H., Fox, O.F. and Koren, E. Immunologic and structural studies of the lupus/Sjögren's syndrome autoantigen, La/SSB, with a monoclonal antibody. *J. Clin. Invest.* 76:801-806, 1985.
29. Harley, J.B., Kaine, J.L., Fox, O.F., Reichlin, M. and Gruber, B. Ro(SS-A) antibody and antigen in a patient with congenital complete heart block. *Arthritis Rheum.* 28:1321-1325, 1985.
30. Altizer, A.J., Gaither, K.K. and Harley, J.B. Purification of anti-nRNP antibodies. In Fleming Scholars Scientific Reports - 1985 (J.B. Harley, ed.), pp. 57-63. Oklahoma Medical Research Foundation, Oklahoma City, 1985.
31. Harley, J.B. (editor) Fleming Scholars Scientific Reports - 1985. Oklahoma Medical Research Foundation, Oklahoma City, OK, 145 p., 1985.
32. Harley, J.B., Alexander, E.L., Bias, W.B., Fox, O.F., Provost, T.T., Reichlin, M., Yamagata, H. and Arnett, F.C. Anti-Ro/SSA and anti-La/SSB in patients with Sjögren's syndrome. *Arthritis Rheum.* 29:196-206, 1986.
33. Rader, M.D., Yamagata, H., Reichlin, M. and Harley, J.B. Complement C4 fixation by the anti-La(SSB) found in normal donors and in patients with systemic lupus erythematosus. *J. Rheumatol.* 13:79-82, 1986.
34. Harley, J.B., Reichlin, M., Arnett, F.C., Alexander, E.L., Bias, W.B. and Provost, T.T. Gene interaction at HLA-DQ enhances autoantibody production in primary Sjögren's syndrome. *Science* 232:1145-1147, 1986.
35. Reichlin, M. and Harley, J.B. Detection by ELISA of antibodies to small RNA protein particles in SLE patients whose sera lack precipitins. *Trans. Assoc. Am. Physicians* 99:161-171, 1986.

36. Mamula, M.J., Fox, O.F., Yamagata, H. and Harley, J.B. The Ro/SSA autoantigen as an immunogen: Some anti-Ro/SSA antibody binds IgG. *J. Exp. Med.* 86:1889-1901, 1986.
37. Southard, E.M. and Harley, J.B. Demonstration of the Ro/SSA: anti-Ro/SSA complex. In Fleming Scholars Scientific Reports - 1986 (J.B. Harley, ed.), pp. 123-132. Oklahoma Medical Research Foundation, Oklahoma City, 1986.
38. Harley, J.B. (editor). Fleming Scholars Scientific Reports - 1986. Oklahoma Medical Research Foundation, Oklahoma City, OK, 150 p., 1986.
39. Reichlin, M. and Harley, J.B. Antibodies to Ro/SSA and the heterogeneity of systemic lupus erythematosus. *J. Rheumatol.* 14 (Suppl. 13):112-117, 1987.
40. Provost, T.T., Watson, R.M., Gaither, K.K. and Harley, J.B. The neonatal lupus erythematosus syndrome. *J. Rheumatol.* 14 (Suppl. 13):199-205, 1987.
41. Sestak, A.L., Harley, J.B., Yoshida, S. and Reichlin, M. Lupus/Sjögren's autoantibody specificities in sera with myeloma paraproteins. *J. Clin. Invest.* 80:138-144, 1987.
42. Gaither, K.K., Fox, O.F., Yamagata, H., Mamula, M.J., Reichlin, M. and Harley, J.B. Implications of anti-Ro/Sjögren's syndrome A antigen autoantibody in normal sera for autoimmunity. *J. Clin. Invest.* 79:841-846, 1987.
43. Thompson, D.F., Harley, J.B. and Greenfield R.A. Use of a P & T letter to influence dosing. *Hosp. Formul.* 22:309-312, 1987.
44. Provost, T.T., Watson, R., Gammon, W.R., Radowsky, M., Harley, J.B. and Reichlin, M. The neonatal lupus syndrome associated with U<sub>1</sub>RNP (nRNP) antibodies. *N. Engl. J. Med.* 316:1135-1139, 1987.
45. Deutscher, S.L., Harley, J.B. and Keene, J.D. Molecular characterization of the Ro small cytoplasmic RNPs. *Mol. Biol. Rep.* 12:242, 1987.
46. Butler, D.A., Sanner, M.K. and Harley, J.B. Autoimmune Epitopes on La/SSB. In Fleming Scholars Scientific Reports - 1987, pp. 1-12. Oklahoma Medical Research Foundation, Oklahoma City, OK, 1987.
47. Reichlin, M. and Harley, J.B. ANA-subsets in systemic lupus erythematosus. In *Systemic Lupus Erythematosus* (J. Smollen, ed.). Springer Verlag, Heidelberg, pp. 105-123, 1987.
48. Harley, J.B. 2. Autoantibodies in Sjögren's Syndrome. In *Sjögren's Syndrome: Clinical and Immunological Aspects* (N. Talal, H.M. Montsopoulos and S. Kassan, eds.). Springer Verlag, Heidelberg, pp. 218-234, 1987.
49. Harley, J.B. and Oleinick, S.R. Immunologically mediated diseases. In *Pathophysiology Syllabus 1987-1988* (C.E. Kaufman and B. Clarke, eds.). University of Oklahoma College of Medicine, Section V, pp. 15-24, 1987.

50. Reichlin, M. and Harley, J.B. Sjögren's syndrome. In Postgraduate Advances in Rheumatology II-XI:1-12, 1987.
51. Harley, J.B. (editor) Fleming Scholars Scientific Reports - 1987. Oklahoma Medical Research Foundation, Oklahoma City, OK, p. 1, 1987.
52. Reichlin, M., Friday, K. and Harley, J.B. Complete congenital heart block followed by the development of antibodies to Ro/SSA in adult life: Serological, clinical and HLA studies in an informative family. Am. J. Med. 84:339-344, 1988.
53. Rosario, M.O., Fox, O.F., Koren, E. and Harley, J.B. Anti-Ro(SSA) antibodies from Ro(SSA)-immunized mice. Arthritis Rheum. 31:227-237, 1988.
54. Provost, T.T., Talal, N., Harley, J.B., Reichlin, M. and Alexander, E. The relationship between anti-Ro(SS-A) antibody positive Sjögren's syndrome and anti-Ro(SS-A) antibody positive lupus erythematosus. Arch. Dermatol. 124:63-71, 1988.
55. Hamilton, R.G., Harley, J.B., Bias, W.B., Roebber, M., Reichlin, M. Hochberg, M.C. and Arnett, F.C. Two Ro(SS-A) autoantibody responses in systemic lupus erythematosus: Correlation of HLA-DR/DQ specificities with quantitative expression of Ro(SS-A) autoantibody. Arthritis Rheum. 31:496-505, 1988.
56. Henderson, W.R., Harley, J.B., Fauci, A.S. and Chi, E.Y. Hypereosinophilic syndrome human eosinophil degranulation induced by soluble and particulate stimuli. Br. J. Haematol. 69:13-21, 1988.
57. Provost, T.T., Talal, N., Bias, W., Harley, J.B., Reichlin, M. and Alexander, E. Ro(SSA) positive Sjögren's/Lupus erythematosus (SCLE) patients are associated with the HLA-DR3 and/or DR6 phenotypes. J. Invest. Dermatol. 91:369-371, 1988.
58. Harley, J.B. Premature death in adult adoptees (letter). N. Engl. J. Med. 319:793, 1988.
59. Cunningham, M.W., McCormack, J.M., Talaber, L.R., Harley, J.B., Ayouls, E.M., Muneer, R.S., Chun, L.T. and Reddy, D.V. Human monoclonal antibodies reactive with antigens of the group A streptococcus and human heart. J. Immunol. 141:2760-2766, 1988.
60. James, J.A., Dickey, D., Fujisaku, A., Deutscher, S.L., Keene, J. and Harley, J.B. Immunoreactivity of the Ro/SSA fusion protein. In Fleming Scholar Scientific Reports - 1988, J.B. Harley and P.J. Thomas, eds. Oklahoma Medical Research Foundation, Oklahoma City, OK, pp. 131-142, 1988.
61. Cleek, J., Fujisaku, A., O'Brien, C.A., Reichlin, M., Deutscher, S., Keene, J. and Harley, J.B. Analysis of the Ro/SSA gene for polymorphisms in patients with systemic lupus erythematosus. In Fleming Scholar Scientific Reports - 1988, J.B. Harley and P.J. Thomas, eds. Oklahoma Medical Research Foundation, Oklahoma City, OK, pp. 159-170, 1988.
62. Deutscher, S.L., Harley, J.B. and Keene, J.D. Molecular analysis of the 60 kDa human Ro ribonucleoprotein. Proc. Natl. Acad. Sci. USA 85:9479-9483, 1988.

63. Reichlin, M. and Harley, J.B. Immune response to the RNA protein particles in systemic lupus erythematosus. A distinctive dichotomy. *Am. J. Med.* 85 (Suppl. 6A):35-37, 1988.
64. Arnett, F.C., Hamilton, R.G., Roebker, M., Harley, J.B. and Reichlin, M. Increased frequencies of Sm and nRNP autoantibodies in American blacks compared to whites with systemic lupus erythematosus. *J. Rheumatol.* 15:1773-1776, 1988.
65. Harley, J.B. and Bjornson, B.H. Hypereosinophilia. In *Current Therapy in Dermatology* (T.T. Provost and E.R. Farmer, eds.). B.C. Decker Inc., Ontario, pp. 159-661, 1988.
66. Harley, J.B. and Gaither, K.K. Autoantibodies. In *Rheumatic Disease Clinics of North America: Systemic Lupus Erythematosus* 14:43-56, 1988.
67. Harley, J.B. and Thomas, P.J. (editors) *Fleming Scholar Scientific Reports - 1988*. Oklahoma Medical Research Foundation, Oklahoma City, OK, p. 186, 1988.
68. Fujisaku, A., Harley, J.B., Frank, M.B., Gruner, B.A., Frazier, B. and Holers, V.M. Genomic organization and polymorphisms of the human C3D/Epstein-Barr virus receptor. *J. Biol. Chem.* 264:2118-2125, 1989.
69. Rader, M.D., O'Brien, C.A., Liu, Y., Harley, J.B. and Reichlin, M. The heterogeneity of the Ro/SSA antigen: different molecular forms in lymphocytes and red blood cells. *J. Clin. Invest.* 83:1293-1298, 1989.
70. Lee, L.A., Gaither, K.K., Coulter, S., Norris, D.A. and Harley, J.B. Pattern of cutaneous IgG deposition in subacute cutaneous lupus erythematosus is reproduced by infusing purified anti-Ro(SSA) autoantibodies into human skin-grafted mice. *J. Clin. Invest.* 83:1556-1562, 1989.
71. Harley, J.B. Autoantibodies in Sjögren's syndrome. *J. Autoimmunity* 2:383-394, 1989. Also In *Sjögren's syndrome: a model for understanding autoimmunity* (N. Talal ed.) Academic Press, London, pp. 75-86, 1989.
72. Arnett, F.C., Hamilton, R.G., Reveille, J.D., Bias, W.B., Harley, J.B. and Reichlin, M. Genetic studies of Ro(SS-A) and La(SS-B) autoantibodies in families with systemic lupus erythematosus and primary Sjögren's syndrome. *Arthritis Rheum.* 32:413-419, 1989.
73. Harley, J.B., Sestak, A.S., Willis, L.G., Fu, S.M., Hansen, J.A. and Reichlin, M. A model for disease heterogeneity in systemic lupus erythematosus. Relationships between histocompatibility antigens, autoantibodies and lymphopenia or renal disease. *Arthritis Rheum.* 32:826-836, 1989.
74. Reichlin, M., Rader, M.D. and Harley, J.B. Autoimmune response to the Ro/SSA particle is directed to the human antigen. *Clin. Exp. Immunol.* 76:373-377, 1989.
75. Gaither, K.K. and Harley, J.B. Shared idiotype among human anti-Ro/SSA autoantibodies. *J. Exp. Med.* 169:1583-1588, 1989.
76. Lehman, T.J.A., Reichlin, M., Santner, T.J., Silverman, E., Petty, R.E., Spenser, C.H. and Harley, J.B. Maternal antibodies to Ro/SSA are associated with early onset of disease and male sex among children with systemic lupus erythematosus. *Arthritis Rheum.* 32:1414-1420, 1989.

77. Mamula, M.J., O'Brien, C.A., Harley, J.B. and Hardin, J.A. The Ro ribonucleoprotein particle: Induction of autoantibodies and the detection of Ro RNAs among species. *Clin. Immunol. Immunopathol.* 52:435-446, 1989.
78. Knutzen Steuer, K.L., Sloan L.B., Oglesby, T.J., Farries, T.C., Nickells, M.W., Densen P., Harley, J.B. and Atkinson, J.P. Lysis of sensitized sheep erythrocytes in human sera deficient in the second component of complement. *J. Immunol.* 143:2256-2261, 1989.
79. Jenq, J., O'Brien, C.A., Horowitz, R. and Harley, J.B. Alternative molecular forms of the 60 kD Ro/SSA peptide. In *Fleming Scholars Reports 1989* (P.J. Thomas, ed.). Oklahoma Medical Research Foundation, Oklahoma City, pp. 39-54, 1989.
80. Harley, J.B. Fleming, Penicillin and the Oklahoma Medical Research Foundation. In *Fleming Scholars Reports 1989* (P.J. Thomas, ed.). Oklahoma Medical Research Foundation, Oklahoma City, pp. 135-140, 1989.
81. Frank, M.B., McArthur, R., Harley, J.B. and Fujisaku, A. Anti-Ro(SSA) autoantibodies are associated with T cell receptor β genes in systemic lupus erythematosus patients. *J. Clin. Invest.* 85:33-39, 1990.
82. James, J.A., Dickey, W.D., Fujisaku, A., O'Brien, C.A., Deutscher, S.L., Keene, J.D. and Harley, J.B. Antigenicity of a recombinant Ro/SSA fusion protein. *Arthritis Rheum.* 33:102-106, 1990.
83. Fujisaku, A., Frank, M.B., Neas, B., Reichlin, M. and Harley, J.B. HLA-DQ gene complementation and other histocompatibility relationships in man with the anti-Ro/SSA autoantibody response of systemic lupus erythematosus. *J. Clin. Invest.* 86:606-611, 1990.
84. O'Brien, C.A. and Harley, J.B. A subset of hY RNAs is associated with erythrocyte Ro ribonucleoproteins. *EMBO J.* 9:3683-3689, 1990.
85. Moreu, H., Hardgrave, K. and Harley, J.B. HLA-DQ and quantitative levels of anti-Ro/SSA in SLE. In *Fleming Scholar Reports - 1990* (W.G. Thurman, ed.) Oklahoma Medical Research Foundation, Oklahoma City, pp. 39-48, 1990.
86. Scofield, R.H., Dickey, W.D., Jackson, K.W., James, J.A. and Harley J.B. A common autoepitope near the carboxyl terminus of the 60 kD Ro ribonucleoprotein: sequence similarity with a viral protein. *J. Clin. Immunol.* 11:378-388, 1991.
87. Scofield, R.H. and Harley, J.B. Autoantigenicity of Ro/SSA antigen is related to a nucleocapsid protein of vesicular stomatitis virus. *Proc. Natl. Acad. Sci.* 88:3343-3347, 1991.
88. Harley, J.B. and Scofield, R.H. Systemic lupus erythematosus: RNA-protein autoantigens, models of disease heterogeneity and theories of etiology. *J. Clin. Immunol.* 11:297-316, 1991.
89. O'Brien, C.A. and Harley, J.B. Abundant hY-like sequences in the human genome and analysis of hy4 pseudogenes. *Mol. Biol. Rep.* 15:171, 1991.

## Curriculum Vitae

John B. Harley, M.D., Ph.D.

90. Provost, T.T., Moses, H., Morris, E.L., Altman, J., Harley, J.B., Alexander, E. and Reichlin, M. Cerebral vasculopathy associated with collateralization resembling moya moya and anti-Ro(SSA) and La(SSB) antibodies. *Arthritis Rheum.* 34:1052-1055, 1991.
91. Layton, K.F., Gross, J., Farris, A.D., Harley, J.B. Sequence Analysis of the human Y5 RNA. In *Fleming Scholars Reports - 1991* (W.G. Thurman ed.) Oklahoma Medical Research Foundation, pp. 31-42, 1991.
92. Harley, J.B. and Dickey, W.D. Sjögren's syndrome. In *Organ-specific Autoimmunity* (P. Bigazzi and M. Reichlin, eds.). Marcel Dekker, New York, pp. 247-274, 1991.
93. Cunningham, M.W., Fenderson, P.G., Harley, J.B., Ayoub, E.M. and McCormick, J.M. Acute rheumatic fever is associated with systemic lupus erythematosus and Sjögren's syndrome by an anti-myosin idiotype. In *New Perspectives on Streptococci and Streptococcal Infections*, (G. Orefici, ed.), Gustav Fisher, Stuttgart, Zbl. Bakt. Suppl. 22:264-266, 1991.
94. James, J.A. and Harley, J.B. Linear epitope mapping of an Sm B/B' polypeptide. *J. Immunol.* 148:2074-2079, 1992.
95. Reichlin, M., Harley, J.B. and Lockshin, M. Serologic studies on monozygotic twins with systemic lupus erythematosus. *Arthritis. Rheum.* 35:457-464, 1992.
96. O'Brien, C.A. and Harley, J.B. Association of hY4 pseudogenes with *Alu* repeats and abundance of hY RNA-like sequences in the human genome. *Gene* 116:285-289, 1992.
97. Mamula, M.J. and Harley, J.B. Anti-Ro autoantibody with cross-reactive binding to the heavy chain of immunoglobulin G. *Yale J. Biol. Med.* 65:277-287, 1992.
98. Holloway, W.C., James, J.A. and Harley, J.B. Sequential autoepitopes shared by siblings with systemic lupus erythematosus. In *Fleming Scholars Reports - 1992* (W. G. Thurman, ed.) Oklahoma Medical Research Foundation, pp. 25-32, 1992.
99. Massicotte, H., Harley, J.B. and Bell, D.A. Characterization of human-human hybridomas to Ro(SSA) derived from normal tonsil lymphoid cells. *J. Autoimmunity* 5:771-785, 1992.
100. Jacobsson, L., Hansen, B.U., Manthorpe, R., Neas, B.R., Hardgrave, K.L. and Harley, J.B. Association of dry eyes and dry mouth with anti-Ro/SS-A and anti-La/SS-B autoantibodies in normal adults. *Arthritis Rheum.* 35:1492-1501, 1992.
101. Harley, J.B., Scofield, R.H. and Reichlin, M. Anti-Ro in Sjögren's syndrome and systemic lupus erythematosus. In *Autoantibodies* (D.S. Pisetsky ed.) *Rheum. Dis. Clin. N.A.*, W.B. Saunders, Philadelphia, 18:337-358, 1992.
102. Harley, J.B. and Reichlin, M. Antibodies to Ro/SSA and La/SSB. In *Dubois' Lupus Erythematosus* (D. Wallace and B. Hahn ed.) Fourth Edition, Lea and Febinger, Philadelphia, pp. 225-232, 1992.
103. Reichlin, M. and Harley, J.B. ANA - an overview. In *Dubois' Systemic Lupus Erythematosus* (D. Wallace and B. Hahn ed.) Fourth Edition, Lea and Febinger, Philadelphia, pp. 188-194, 1992.

104. Harley, J.B., and Scofield, R.H. Aetiological clues from the fine specificity of anti-Ro. The Arthritis and Rheumatism Council for Research, Conference Proceedings Number 8, p. 43-49, 1992.
105. Karsh, J., Harley, J.B., Goldstein, R. and Lazarovits, A.I. The interaction of Ro/SSA and the human immune system: Ro inhibits the autologous mixed lymphocyte reaction. *Clin. Exp. Immunol.* 91:103-109, 1993.
106. Dickey, W.D., von Egmond, J.E., Hardgrave, K.L., Harley, J.B. and Scofield, R.H. Presence of anti-La/SSB is associated with binding to the 13-kD carboxyl terminus of 60-kD Ro/SSA in systemic lupus erythematosus. *J. Invest. Dermatol.* 100:412-416, 1993.
107. Reid, M.S., Arbuckle, M., James, J.A. and Harley, J.B. Fine specificity of an anti-Sm response in a spliceosome immunized rabbit. In *Fleming Scholars Reports - 1993* (W.G. Thurman, ed.) Oklahoma Medical Research Foundation pp. 59-68, 1993.
108. Williams, R.C. Jr., Malone, C.C. and Harley, J.B. Rheumatoid factors from patients with rheumatoid arthritis react with tryptophan 60 and 95, lysine 58, and arginine 97, on human  $\beta_2$ -microglobulin. *Arthritis Rheum.* 36:916-926, 1993.
109. Hardgrave, K.L., Neas, B., Scofield, R.H. and Harley, J.B. Antibodies to vesicular stomatitis virus proteins in patients with systemic lupus erythematosus and normals. *Arthritis Rheum.* 36:962-970, 1993.
110. Harley, J.B. RNA-protein autoantibodies in lupus. *Clin. Immunol. Newsletter* 13:19-23, 1993.
111. Scofield, R.H., Warren, W.L., Koelsch, G. and Harley, J.B. An hypothesis for the HLA-B27 immune dysregulation in spondyloarthropathy. Contributions from enteric organisms B27 structure, peptides bound by B27 and convergent evolution. *Proc. Natl. Acad. Sci.* 90:9330-9334, 1993.
112. McCarty, G.A., Harley J.B. and Reichlin M. A distinctive autoantibody profile in black female patients with lupus nephritis. *Arthritis Rheum.* 36:1560-1565, 1993.
113. McCormack, J.M., Crossley, C.A., Ayoub, E.M., Harley, J.B. and Cunningham, M.W. Post-streptococcal anti-myosin antibody idiotype associated with systemic lupus erythematosus and Sjögren's syndrome. *J. Infect. Dis.* 168:915-921, 1993.
114. Harley, J.B., Sheldon, P., Neas, B., Murphy, S., Wallace, D.J., Scofield, R.H., Shaver, T.S. and Moser, K.L. Systemic lupus erythematosus: Considerations for a genetic approach. *J. Invest. Dermatol.* 103:144S-149S, 1994.
115. Scofield, R.H., Frank, M.B., Neas, B., Horowitz, R.M., Hardgrave, K.L., Fujisaku, A., McArthur, R. and Harley, J.B., Cooperative association of T cell  $\beta$  receptor and HLA-DQ alleles on the production of anti-Ro in systemic lupus erythematosus. *Clin. Immunol. Immunopath.* 72:335-341, 1994.

## Curriculum Vitae

John B. Harley, M.D., Ph.D.

116. Dickey, W.D., Scofield, R.H. and Harley, J.B. Human antibody production in the severe combined immunodeficiency (SCID) mouse. *Clin. Exp. Rheumatol.* 12:157-161, 1994.
117. Scofield, R.H. and Harley, J.B. Association of anti-Ro/(SS-A) autoantibodies with glutamine in position 26 of DQB1. *Arthritis Rheum.* 37:961-962, 1994.
118. Harley, J.B. Autoantibodies are central to the diagnosis and clinical manifestations of lupus. *J. Rheumatol.* 21:1183-1185, 1994.
119. Reichlin, M., Harley, J.B., and Hulsey, M.A. The 60-kDa Ro/SSA protein contains disulfide bonds. *In Sjögren's Syndrome State of the Art Proceedings of the Fourth International Symposium.* (M. Homma, S. Sugai, T. Tojo, N. Miyasaka and M. Akizuki, editors). Kugler Publications, Amsterdam, pp.149, 1994.
120. James, J.A., Scofield, R.H. and Harley, J.B. Basic amino acids predominate in the sequential autoantigenic determinants of the 70 kD ribonucleoprotein. *Scan. J. Immunol.* 39:557-566, 1994.
121. Musser, C., Moser, K., Pan, Z., Yu, H., Sheldon, P., Arthur, E., Codding, C., Ginzler, E.M., McArthur, R.L., Reichlin, M., Targoff, I.N., Wallace, D.J., Wolf, R.E., Kono, D.H., Theofilopoulos, A.N. and Harley, J.B. Linkage analysis of chromosome 19 marker loci to systemic lupus erythematosus and to lupus nephritis. *In Fleming Scholars Reports - 1994* (W.G. Thurman, ed.) Oklahoma Medical Research Foundation, 43-55, 1995.
122. Galchen, R.R., Farris, A.D. and Harley, J.B. Cloning and sequencing of rabbit Ro RNAs. *In Fleming Scholars Reports - 1994* (W.G. Thurman, ed.) Oklahoma Medical Research Foundation, 23-31, 1995.
123. James, J.A., Mamula, M. and Harley, J.B. Sequential autoantigenic determinants of the small nuclear ribonuclear protein Sm D are shared by human lupus autoantibodies and MRL *lpr/lpr* antibodies. *Clin. Exp. Immunol.* 98:419-426, 1994.
124. Alexander, E.L., Razenbach, M., Kumar, A.J., Kozachuk, W.E., Rosenbaum A., Patronos, Harley, J.B. and Reichlin, M. Anti-Ro (SS-A) autoantibodies in central nervous system disease associated with Sjögren's syndrome (CNS-SS): Clinical, neuroimaging, and angiographic correlates. *Neurology*, 44:899-908, 1994.
125. Harley, J.B., Moser, K.L. and Neas, B.R. Logistic transmission modeling for problem #1 of GAW9. *Genetics Analysis Workshop, Participant Contributions*, pp. 68-72, 1994.
126. James, J.A., Gross, T., Scofield, R.H. and Harley, J.B. Immunoglobin epitope spreading and autoimmune disease after peptide immunization: sm B/B'-derived PPPGMRPP and PPPGIRGP induced spliceosome autoimmunity. *J. Exp. Med.* 181:453-461, 1995.
127. Scofield, R.H., Dickey, W.D., Hardgrave, K.L., Neas, R., Horowitz, R.M., McArthur, R.A., Fujisaku, A., Frank, M.B. and Harley, J.B. Immunogenetics of epitopes of the carboxyl terminus of the human 60-kD Ro autoantigen. *Clin. Exp. Immunol.* 99:256-261, 1995 (Corrigendum. 100:377, 1995).

128. Farris, A.D., O'Brien, C.A. and Harley, J.B. Y3 is the most conserved small RNA component of Ro ribonucleoprotein complexes in vertebrate species. *Gene* 154:193-198, 1995.
129. Huang, S-C., Pan, Z., Kurien, B.T., James, J.A., Harley, J.B. and Scofield, R.H. Immunization with vesicular stomatitis virus nucleocapsid protein induces autoantibodies to the 60kD Ro ribonucleoprotein particle. *J. Invest. Med.* 43:151-158, 1995.
130. James, J.A. and Harley, J.B. Peptide autoantigenicity of the small nuclear ribonucleoprotein C. *Clin. Exp. Rheumatol.* 13:299-305, 1995.
131. Harley, J.B., Moser, K.L. and Neas, B.R. Logistic transmission modeling of simulated data. *Genetic Epidemiol.* 12:607-612, 1995.
132. Harley, J.B. Autoimmune/immunologically-mediated diseases of eyes, endocrine glands, kidney and reproductive organs, anti-inflammatory drugs. In Literature Review for the 1995 ABAI Exam Syllabus. American College of Allergy, Asthma and Immunology, Chicago, pp. 249-279, 1995.
133. Harley, J.B. and Scofield, R.H. The spectrum of ankylosing spondylitis. *Hospital Practice* 30:37-46, 1995.
134. Scofield, R.H., Kurien, B.T., Gross, T., Warren, W.L. and Harley, J.B. HLA-B27 binds a peptide from its own sequence and similar peptides from bacteria: implications for spondyloarthropathies. *Lancet*, 345:1542-1544, 1995.
135. Harley, J.B. and James, J.A. Autoepitopes in lupus. *J. Lab. Clin. Med.* 126:509-516, 1995.
136. Harley, J.B. Mechanisms of immune injury: The organization of the immune system. In Essentials of Pathophysiology (C.E. Kaufman and P.A. McKee, eds.) Little, Brown and Co. 363-374, 1996.
137. McClain, M.T., Kaufman, K.M. and Harley, J.B. Expression of recombinant human autoantigens SmB and B' in *E. coli*. Fleming Scholar Reports - 1995, Oklahoma Medical Research Foundation, pp. 49-59, 1996.
138. Nightingale, L.D., Moser, K.L., Yu H., Avery, D., Kendrick, D., Koelsch, G., Arthur, E., Coddington, C., Ginzler, E.M., McArthur, R.L., Scofield, R.H., Reichlin, M., Targoff, I.N., Wallace, D.J., Wolf, R.E. and Harley, J.B. Analysis of microsatellite markers chromosome 18 in conjunction with transmission of systemic lupus erythematosus. Fleming Scholar Reports - 1995, Oklahoma Medical Research Foundation, pp71-82, 1996.
139. Scofield, R.H., Fogel, M., Rhoades, E.R. and Harley, J.B. Rheumatoid arthritis in a United States Public Health Service Hospital in Oklahoma. Serologic manifestations in rheumatoid arthritis vary among tribal groups. *Arthritis Rheum.* 39:283-286, 1996.
140. James, J.A. and Harley, J.B. Human lupus anti-spliceosome A protein autoantibodies bind contiguous surface structures and segregate into two sequential epitope binding patterns. *J. Immunol.*, 156:4018-4026, 1996.

141. Scofield, R.H., Henry, W.E., Kurien, B.T., James, J.A. and Harley, J.B. Immunization with short peptides derived from the systemic lupus erythematosus associated 60 kD Ro autoantigen results in anti-Ro ribonucleoprotein autoimmunity. *J. Immunol.* 156:4059-4066, 1996.
142. Neas, B.R., Moser, K.L., Harley, J.B. Logistic transmission modeling for the simulated data of GAW 10 Problem #2, chromosome 5. *Genetic Analysis Workshop 10, Participant Contributions Volume II.* pp290-293, 1996.
143. Scofield, R.H., Zhang, F., Kurien, B.T., Anderson, C.J., Reichlin M., Harley, J.B. and Stafford, H.A. Development of anti-Ro response in systemic lupus erythematosus. *Arthritis Rheum* 39; 1664-1668, 1996.
144. Lee, L.A., Alvarez, K., Gross., T. and Harley, J.B. The recognition of human 60kD Ro ribonucleoprotein particles by antibodies associated with cutaneous lupus and neonatal lupus. *J. Invest. Derm.*, 107:225-228, 1996.
145. Farris, A.D., Gross, J.K., Hanas, J.S. and Harley, J.B. Genes for murine Y1 and Y3 small cytoplasmic Ro RNAs have class 3 RNA polymerase III promoter structures and are unlinked in mouse chromosome 6. *Gene* 174; 35-42, 1996.
146. Harley, J.B. When will we have some answers? *Lupus Linkage Newsletter* 2;1, 1996.
147. Reichlin, M. and Harley, J.B. Chapter 22 ANA - an overview. In Dubois' Systemic Lupus Erythematosus (D. Wallace and B. Hahn ed.) Fifth Edition, Lea and Febinger, Philadelphia, pp. 397-405, 1997.
148. Harley, J.B. and Reichlin, M. Chapter 25 Antibodies to Ro/SSA and La/SSB. In Dubois' Systemic Lupus Erythematosus (D. Wallace and B. Hahn ed.) Fifth Edition, Lea and Febinger, Philadelphia, pp. 443-455, 1997.
149. James, J.A., Scofield, R.H., and Harley, J.B. Lupus humoral autoimmunity after short peptide immunization. *Ann. NY Acad. Sci.*, 815:124-127, 1997.
150. Farris, A.D., Pavion-Dutilleal, F., Pavion, E., Harley, J.B., Lee, L.A., Ultra structural localization of Ro protein and Y RNAs reveal an association with novel electron dense bodies. *Proc Nat'l Acad. Sci.* 94:3040-3045, 1997.
151. Scofield, R.H., Zhang, F.C., Kurien, B. and Harley, J.B. Anti-Ro fine specificity defined by multiple antigenic epitopes. *Clin Exp Immun*, 109:480-487, 1997.
152. Huang, S.C., Scofield, R.H., and Harley, J.B. Human Anti-Ro autoantibodies bind multiple conformational epitopes of 60kD Ro autoantigen *J. Clin. Immunol.* 17:212-219, 1997.
153. Harley, J.B. and Moser, K.L. "Genetics of Lupus", in Rheumatology (eds JH Klipper and PA Dieppe) Mosby, St. Louis, 7.3.1-7.3.5, 1997.
154. Ramakrishnan, S., Sharma, H.W., Higgens-Sochaski, K., Farris, A.D., Kaufman, K., Harley, J.B., Collins, K.A., Ger, J.M., vanVenroodij, W.J., Martin, M.L., and Narayanan, R.

- Characterization of human telomerase complex. Proc. Nat'l. Acad. Sci. USA. 94:10075-10079, 1997.
155. James, J.A., Kaufman, K.M., Farris, A.D., Taylor-Albert, E., Lehman, T.J.A., and Harley, J.B. Epstein-Barr virus infection rates suggest a possible etiology for systemic lupus erythematosus. J. Clin. Invest., 100:3019-3026, 1997.
156. Neas, B.R., Moser, K.L., Harley, J.B. Logistic transmission modeling for the simulated data of GAW 10 Problem #2. Genetic Epidemiol. 14:857-860, 1997.
157. Schilling, A.R., Arbuckle, M.R., James, J.A., and Harley, J.B. An unusual anti-spliceosomal autoimmune response is directed against a cross-reactive, proline-rich repeated motif in lupus sera. Fleming Scholar Reports - 1997, Oklahoma Medical Research Foundation. pp 49-62, 1997.
158. Shaver, T.S., Harley, J.B., Moser, K.L. Heredity and systemic lupus erythematosus: dissecting a complex genetic disease. Kans. Med. 97:18-22, 1997.
159. Harley J.B. and Gallagher G. Lupus and Interleukin-10. J. Rheumatol. 24; 2273-2275, 1997.
160. Arbuckle, M.R., Gross, T., Scofield, R.H., Hinshaw, L.B., Chang, A.C.K., Taylor, F.B., Jr., Harley, J.B., and James, J.A. Lupus humoral autoimmunity induced in a primate model by short peptide immunization. J. Invest. Med. 46:58-65, 1998.
161. James, J.A., Harley, J.B. Peptide induced lupus autoimmunity in inbred strains of mice. J. Immunol. 160:502-508, 1998.
162. Harley, J.B. and James, J.A. What role does Epstein-Barr virus have in lupus? The Immunol. 6:79-83, 1998.
163. Scofield, R.H., Tardibono, G., Ogden, S.B., Harley, J.B., Reichlin, M. and Kurien, B.T. Rheumatoid hyperviscosity: Analysis of a patient with blocking intermediate complexes and a review of the literature. Semin Arthritis Rheumatol, 27:1-11, 1998.
164. Wax, M.B., Tezel, G., Saito, I., Gupta, R.S., Harley, J.B., Li, Z., and Romano, C. Anti-Ro/SS-A positivity and heat shock protein antibodies in patients with normal pressure glaucoma. Am. J. Ophthalmology 125:145-157, 1998.
165. Harley, J.B., Kaufman, K.M. and James, J.A. Epstein-Barr virus may cause lupus. Rheumatol. Europe 27: suppl. 2:33, 1998.
166. Kindt, T.J. and Harley, J.B. Genetic Basis of Disease Susceptibility. Chapter 22, Report of the NIAID Task Force in Immunology. In press, 1998.
167. James, J.A. and Harley, J.B. B cell epitope spreading in autoimmunity. Immunol. Rev. 164: 184-200, 1998
168. Harley, J.B. and Neas, B.N. Oklahoma Choctaw and systemic sclerosis. The founder effect and genetic susceptibility. Arthritis Rheum. In press, 1998.

169. Moser, K.L., Neas, B.R., Salmon, J.E., Yu, H. McGuire, C., Asundi, N., Bruner, G.R., Fox, J., Kelly, J., Henshall, S., Bacino, D., Deitz, M., Hogue, R., Koelsch, G., Nightingale, L., Shaver, T., James, J.A., Referring Physicians, and Harley, J.B. Genome scan of human systemic lupus erythematosus. Evidence for linkage on chromosome 1q in African-American pedigrees. Proc. Natl. Acad. Sci. 95, in press 1998.
170. Ford, A.L., Kurien, B.T., Harley, J.B., Scofield, R.H. Anti-centromere autoantibody in a patient evolving from lupus Sjögren's overlap to the CREST variant of scleroderma. J. Rheumatol. 25:1419-1424, 1998.
171. Arbuckle, M.R., Schilling, A.R., Harley, J.B., and James, J.A. A limited lupus anti-spliceosomal response targets a cross-reactive, proline rich motif. J. Autoimmunity 11:1-8, 1998.
172. Harley, J.B. Is lupus caused by a virus? Lupus Linkage Newsletter 4:2-3, 1998.
173. Shetty, A.S., Moser, K.L., Yu, H., Asundi, N., Fox, J., Sestak, A.L., Richardson, B.C., Salmon, J.I. and Harley, J.B. Linkage Analysis: Scanning the human for genes involved in pseudogout. In Fleming Scholar Scientific Reports-1998. Oklahoma Medical Research Foundation, Oklahoma City. In Press, 1998.
174. Scofield, R.H., Farris, A.D., Horsfall, A.C., and Harley, J.B. Fine specificity of the autoimmune response to Ro/SSA ribonucleoprotein. Arthritis Rheum, In press 1998.
175. Harley, J.B., Moser, K.L., Gaffney, P.M., and Behrens, T.W. Genetics of human systemic lupus erythematosus. Current Opinion Immunol. 6: in press, 1998.
176. Scofield, R.H., Neas, B.R., Glass, D.N., and Harley, J.B. HLA-B is related to ankylosing spondylitis by complex positive and negative effects: Genetic linkage and other results from logistic transmission modeling. Revisions requested, 1998.
177. Sestak, A.L., Shaver, T.S., Moser, K.L., Sheldon, P.W., Neas, B.R. and Harley, J.B. Familial aggregation of lupus and autoimmunity in an unusual multiplex pedigree. J. Rheumatol, revisions requested 1998.
178. Harley, J.B. Genetic analysis of rheumatic disease. J. Rheumatol. Revision requested, 1998.
179. Farris, A.D., Koelsch, G., Simons, F., Pruijn, G.J.M., van Venrooij, W.J., and Harley, J.B. Conserved features of Y RNAs revealed by automated phylogenetic secondary structure analysis. Submitted, 1998.
180. Scofield, R.H., Kurien, B.T., Zhang, F., Mehta, P., Kaufman, K., Gross, T., Gordon, T. and Harley, J.B. Protein-protein interaction of the Ro-ribonucleoprotein particle using multiple antigenic peptides. Submitted, 1998.
181. James, J.A., McClain, Kaufman K.M., Koelsch G., Williams D.G., and Harley, J.B. Side chain specificities and molecular modeling of peptide determinants for two Anti-Sm B/B'. Autoantibodies. Submitted, 1998.

182. Kaufman, K.M., Farris, A.D, Gross, J.K. and Harley, J.B. Characterization of the Murine 60 kD Ro gene: genomic sequence organization and chromosomal localization. Submitted, 1998
183. Moser, K.L., McGuire, C., Kelly, J., Asundi, N., Yu, H., Bruner, G.R., Hogue, R., Neas, B.R. and Harley, J.B. Confirmation of genetic linkage between human systemic lupus erythematosus and D1s229 at 1q41. Submitted, 1998.
184. Farris, A.D., Brown, L., Reynolds, P., Harley, J.B., James, J.A., Scofield, R.H., McClusky, J., and Gordon, T.P. Induction of autoimmunity by multivalent immunodominant and subdominant T cell determinants of La (SS-B). Submitted.
185. Kurien, B.T., Zhang, F., Mehta, P., Kaufman, K., Gross, T., Gordan, T., Harley, J.B., and Scofield, R.H. Protein-protein interaction between Ro 60 and La polypeptides using multiple antigenic peptides. In preparation.
185. Farris, A.D., Harley, J.B., Reynolds, P., James, J.A., Schofield, R.H., Brown, L., McCluskey, J. and Gordon, T.P. Induction of autoimmunity by multivalent immunodominant and subdominant T cell determinants of L (SS-B). Submitted, 1998.

Abstracts

1. Harley, J.B., Goldfine, H. and Rasmussen, H. Demonstration that the kinetics of hyperbaric oxygen killing in *Escherichia coli* K1060 vary with the membrane unsaturated fatty acid composition. Abstracts of the Annual Meeting of the American Society of Microbiology, p. 165, 1976.
2. Carroll, A.J., Prchal, J.T., Prchal, J.F., Crist, W.M., Mullah, A., Finley, S.C., Gealy, W.J., Harley, J.B. and Finley, W.J. Hemizygous expression of glucose-6-phosphate dehydrogenase in leukocytes and platelets of a heterozygote for the Wiskott-Aldrich syndrome. Am. J. Hum. Genet. 31:41A, 1979.
3. Bjornson, B.H., Harley, J.B., Andre-Schwartz, J., Alfano-Perriello, D., Fauci, A., Wolff, S. and Desforges, J.F. Peripheral blood stem cell cultures in patients with hypereosinophilic syndrome. Clin. Res. 28:634A, 1980.
4. Harley, J.B., Gealy, W.J. and Dwyer, J.M. Heterogeneity of allelic exclusion of Wiskott- Aldrich syndrome carriers. Pediatr. Res. 15:596, 1981.
5. Ackerman, S.J., Loering, D.A., Harley, J.B., Fauci, A.S., Venge, P., Olsson, I. and Gleich, G.J. Distinctive cationic proteins of the human eosinophil granule. Fed. Proc. 41:A1271, 1982.
6. Harley, J.B. and Fauci, A.S. Modulation of human B cell responses by cyclosporin A. Clin. Res. 20:349, 1982.
7. Harley, J.B., Fauci, A.S. and Gralnick, H.R. The non-cardiovascular findings which identify the patients at risk for heart disease in the idiopathic hypereosinophilic syndrome. Blood 60:128a, 1982.

8. Henderson, W.R., Harley, J.B., Fauci, A.S. and Klebanoff, S.J. Leukotriene B<sub>4</sub>, C<sub>4</sub> and D<sub>4</sub> generation by human eosinophils. *J. Allergy Clin. Immunol.* 71:138, 1983.
9. Henderson, W.R., Harley, J.B., Fauci, A.S., Klebanoff, S.J. and Chi, E.Y. Human eosinophil degranulation: Role of phospholipase A<sup>2</sup> and arachidonic acid metabolites. *Clin. Res.* 31:314A, 1983.
10. Harley, J.B. and Fauci, A.S. The human in vitro T-dependent antigen-induced synthesis of specific antibody is modulated by cyclosporin A. Abstracts of the First International Congress on Cyclosporine, p. 136, 1983.
11. Harley, J.B., Yamagata, H. and Reichlin, M. Anti-La (SS-B) commonly occurs with anti-Ro (SS-A) in SLE. *Arthritis Rheum.* 26:S74, 1983.
12. Harley, J.B., Yamagata, H. and Reichlin, M. Some healthy individuals make anti-La/SSB autoantibody. *Clin. Res.* 31:803A, 1983.
13. Yamagata, H., Harley, J.B. and Reichlin, M. Molecular structure of Ro/SSA assay for Ro/SSA. *Clin. Res.* 31:808A, 1983.
14. Harley, J.B., Rader, M., Yamagata, H. and Reichlin, M. Complement activation by the anti-La/SSB autoantibody found in SLE patients and normal donors. *Clin. Res.* 32:464A, 1984.
15. Harley, J.B., Alexander, E., Arnett, F., Fox, O., Reichlin, M. and Yamagata, H. Sjögren's syndrome (SS): Quantitative anti-Ro/SSA, -La/SSB, and -nRNP(Sm). *Clin. Res.* 32:538A, 1984.
16. Harley, J.B., Yamagata, H. and Reichlin, M. The molecular structure of Ro/SSA. *Clin. Res.* 32:566A, 1984.
17. Rader, M., Yamagata, H., Reichlin, M. and Harley, J.B. The capacity of anti-La/SSB autoantibody found in SLE patients and normal donors to activate complement. *Arthritis Rheum.* 27:S83, 1984.
18. Harley, J.B., Yamagata, H. and Reichlin, M. The molecular structure of Ro/SSA. *Arthritis Rheum.* 27:S42, 1984.
19. Harley, J.B., Alexander, E., Arnett, F., Fox, O., Reichlin, M. and Yamagata, H. Relationships of relative quantitative anti-Ro/SSA, -3 La/SSB, and -nRNP(Sm) to the clinical manifestations of Sjögren's syndrome. *Arthritis Rheum.* 27:S46, 1984.
20. Harley, J.B., Alexander, E.L., Fox, O.F., Provost, T.T., Reichlin, M., Yamagata, H. and Arnett, F.C. Autoantibodies in Sjögren's syndrome (SS). *Protides Biol. Fluids Colloq.* 33:2.08, 1985.
21. Harley, J.B. Immunoassay of anti-Ro/SSA and anti-La/SSB. *Protides Biol. Fluids Colloq.* 33:3.10, 1985.
22. Harley, J.B., Rosario, M.O., Yamagata, H., Fox, O. and Koren, E. Analysis of anti-La/SSB and La/SSB with a monoclonal antibody. *Clin. Res.* 33:507A, 1985.

23. Harley, J.B., Gaither, K.K., Fox, O.F. and Reichlin, M. Prevalence of anti-Ro/SSA and anti-nRNP (Sm) in normal sera may signify different mechanisms of autoantibody generations in disease. *Clin. Res.* 33:507A, 1985.
24. Harley, J.B., Kaine, J.L., Fox, O.L. and Reichlin, M. Evidence that anti-Ro/SSA may be involved in the genesis of congenital complete heart block. *Clin. Res.* 33:620A, 1985.
25. Handwerger, B.S., Meryhew, N.L., Peterson, J.M., Tanji, K., Harley, J.B., Gastineau, D.A. and Messner, R.P. Cross-reactivity of monoclonal NZB anti-mouse erythrocyte antibodies with non-erythrocyte autoantigens. *Arthritis Rheum.* 28:S33, 1985.
26. Harley, J.B., Rosario, M.O., Yamagata, H., Fox, O.F. and Koren, E. Anti-La/SSB and La/SSB analysis with a monoclonal antibody. *Arthritis Rheum.* 28:S88, 1985.
27. Harley, J.B., Kaine, J.L., Fox, O.F., Reichlin, M. and Gruber, B. Evidence that anti-Ro/SSA may be involved in the genesis of congenital complete heart block. *Arthritis Rheum.* 28:S46, 1985.
28. Mamula, M.J., Fox, O.F. and Harley, J.B. Cross-reactivity of Ro/SSA and immunoglobulin G. *Arthritis Rheum.* 28:S37, 1985.
29. Gaither, K.K., Fox, O.F., Reichlin, M. and Harley, J.B. An hypothesis for differences in the occurrence of autoantibodies against extractable antigens. *Arthritis Rheum.* 28:S68, 1985.
30. Harley, J.B., Reichlin, M., Arnett, F.C., Alexander, E.L., Bias, W.B. and Provost, T.T. Gene interaction at HLA-DQ enhances autoantibody production in primary Sjögren's syndrome. Abstracts of the Arthritis Foundation Fellows Conference, p. 5, 1985.
31. Harley, J.B., Reichlin, M., Fu, S.M., Arnett, F.C., Hansen, J.A., Alexander, E.L., Bias, W.B. and Provost, T.T. Gene interaction at HLA-DQ and autoantibody levels in primary Sjögren's syndrome (1 USS) and lupus (SLE). *Clin. Res.* 34:617A, 1986.
32. Reichlin, M. and Harley, J.B. Anti-RNA proteins in SLE. *Clin. Res.* 732A, 1986.
33. McGowan-Tuskes, A., Arnett, F.C., Harley, J.B. and Jordon, R.E. Anti-Ro/SSA antibodies speckled-like thread pattern associated with Sjögren's syndrome. *Clin. Res.* 29:640A, 1986.
34. Harley, J.B., Reichlin, M., Arnett, F.C., Alexander, E.L., Bias, W.B. and Provost, T.T. Gene interaction at HLA-DQ worsens the serologic abnormalities of primary Sjögren's syndrome. *Arthritis Rheum.* 29:S38, 1986.
35. Harley, J.B., Fu, S.M., Hansen, T.A. and Reichlin, M. HLA associations with the titers of anti-RNA-protein in SLE. *Arthritis Rheum.* 29:S25, 1986.
36. Hamilton, R.G., Rose, K.M., Roebber, M., Bias, W.B., Cochran B., Harley, J.B. and Arnett, F.C. RNA polymerase I antibodies in systemic lupus erythematosus (SLE). *Arthritis Rheum.* 29:S27, 1986.
37. Rynes, R.I., Reichlin, M. and Harley, J.B. SLE, complement component C2 deficiency, anti-Ro/SSA and anti-La/SSB antibodies. *Arthritis Rheum.* 29:S60, 1986.

## Curriculum Vitae

John B. Harley, M.D., Ph.D.

38. Massicotte, H., Harley, J.B. and Bell, D.A. Human-human hybridoma with anti-Ro activity. Abstracts of the First International Conference on Systemic Lupus Erythematosus, p. 84, 1986.
39. Watson, R., Radowsky, M., Harley, J., Provost, T. and Reichlin, M. Neonatal lupus erythematosus: Association with nRNP antibodies. Clin. Res. 34:887A, 1986.
40. Gaither, K.K., Fox, O.F., Yamagata, H., Mamula, M.J., Reichlin, M. and Harley, J.B. Implications of anti-Ro/SSA autoantibody in normal sera for lupus and Sjögren's syndrome. Fourth Texas Immunology Meeting Abstracts, p. A-2, 1986.
41. Rosario, M.O., Fox, O. and Harley, J.B. Immunogenicity of the ribonucleoprotein antigen Ro/SSA from human tissue. Fourth Texas Immunology Meeting Abstracts, p. A-2, 1986.
42. Rosario, M.O., Fox, O., Koren, E. and Harley, J.B. Monoclonal anti-Ro/SSA antibodies from BALB/c mice immunized with human Ro/SSA. Fed. Proc. 46:1366, 1987.
43. Harley, J.B., Sestak, A.L., Yoshida, S. and Reichlin, M. Paraprotein immunoglobulins and anti-RNA-protein autoantibodies. Clin. Res. 35:563A, 1987.
44. Rader, M.D., O'Brien, C.O., Harley, J.B., Liu, Y. and Reichlin, M. Heterogeneity of the Ro/SSA antigen: Different molecular forms in lymphocytes and red blood cells. Arthritis Rheum. 30:S55, 1987.
45. Gaither, K.K., Bias, W.B. and Harley, J.B. The frequency of SLE autoantibodies in normal sera and correlations with class II HLA antigens. Arthritis Rheum. 30:S22, 1987.
46. Sestak, A.L., Harley, J.B., Yoshida, S. and Reichlin, M. Lupus/Sjögren's autoantibody specificities in sera with paraproteins. Arthritis Rheum. 30:S56, 1987.
47. Massicotte, H., Harley, J. and Bell, D.A. Human-human hybridomas with anti-Ro activity. Arthritis Rheum. 30:S77, 1987.
48. Mamula, M.J., Hardin, J.A., Janeway, C.A. and Harley, J.B. Induction of autoimmunity to the Ro particle in normal animals. Arthritis Rheum. 30:S124, 1987.
49. Watson, R., Gammon, W.R., Radowsky, M., Harley, J.B. and Reichlin, M.R. Neonatal lupus syndrome: Association with U1RNP (nRNP) antibodies. Arthritis Rheum. 30:S81, 1987.
50. Provost, T.T., Talal, N., Harley, J.B. and Reichlin, M. Ro(SS-A) positive Sjögren's syndrome (SS)/lupus erythematosus (LE) patients. Clin. Res. 35:811A, 1987.
51. Gaither, K.K., Bias, W.B. and Harley, J.B. The lupus autoantibody, anti-Ro/SSA, is found in some normal donors and is associated with HLA-DR3. Thirteenth Annual American Society of Histocompatibility and Immunogenetics and Tenth International Histocompatibility Conference, New York, November 18-23, p. A65, 1987.
52. Harley, J.B., Willis, L.G., Fu, S.M., Hansen, J., Sestak, A.L. and Reichlin, M. Clinical, HLA and serologic data support a model for the clinical heterogeneity of systemic lupus erythematosus

(SLE). Fellows Conference Abstracts, Arthritis Foundation, Amelia Island Plantation, Florida, December 11-13, p. 20, 1987.

53. Harley, J.B., Willis, L.G., Fu, S.M., Hansen, J.A., Sestak, A.L. and Reichlin, M. A model for the heterogeneity of systemic lupus erythematosus (SLE) derived from clinical histocompatibility and serologic data. Midwest Section, American Federation for Clinical Research, Chicago, November 10-12, Clin. Res. 35:854A, 1987.
54. Lee, L.L., Gaither, K.K., Coulter, S.N., Norris, D.A. and Harley, J.B. The pattern of cutaneous IgG deposition in cases of subacute lupus erythematosus is reproduced by infusing purified anti-Ro(SSA) antibodies into human skin grafted mice. Clin. Res. 36:250A, 1988.
55. Harley, J.B., Sestak, A.L., Willis, L.G., Fu, S.M., Hansen, J.A. and Reichlin, M. A model for the heterogeneity of systemic lupus erythematosus (SLE) derived from clinical, histocompatibility and serologic data. Clin. Res. 36:533A, 1988.
56. Lee, L.A., Gaither, K.K., Coulter, S.N., Norris, D.A. and Harley, J.B. The pattern of cutaneous IgG deposition in cases of subacute cutaneous lupus erythematosus is reproduced by infusing purified anti-Ro (SSA) antibodies into human skin-grafted mice. Clin. Res. 36:667A, 1988.
57. McNicholl, J., Provost, T.T., Bias, W., Harley, J., Reichlin, M. and Alexander, E. Immunogenetic relationship between neonatal lupus erythematosus (NLE) mothers and Ro(SS-A) positive Sjögren's syndrome (SS)/lupus erythematosus (LE) patients. Clin. Res. 36:673A, 1988.
58. Evans, J., Arguelles, E., Harley, J., Reichlin, M. and Craft, J. Antibodies to ribonucleoproteins in SLE. Arthritis Rheum. 4:S54, 1988.
59. Lee, L.L., Gaither, K.K., Coulter, S.N., Norris, D.A. and Harley, J.B. The pattern of cutaneous IgG deposition in cases of subacute cutaneous lupus erythematosus is reproduced by infusing purified anti-Ro(SSA) antibodies into skin grafted mice. Arthritis Rheum. 4:S67, 1988.
60. Lehman, T.J.A., Harley, J.B., Silverman, E., Petty, R., Spencer, C. and Reichlin, M. Maternal antibodies to SSA/Ro correlate with early age of onset and male sex in childhood SLE. Arthritis Rheum. 4:S93, 1988.
61. McNicholl, J.M., Provost, T.T., Bias, N.B., Harley, J.B., Reichlin, M. and Alexander, E.L. Immunogenetic relationship between anti-Ro(SS-A) positive Sjögren's syndrome/lupus erythematosus patients (SS/SLE) and mothers of infants with neonatal lupus erythematosus (NLE). Arthritis Rheum. 4:S94, 1988.
62. Harley, J.B., Sestak, A.L., Willis, L.G., Fu, S.M., Hansen, J.A. and Reichlin, M. Disease heterogeneity in systemic lupus erythematosus (SLE) is related to histocompatibility antigens and autoantibodies. Arthritis Rheum. 4:S15, 1988.
63. Gaither, K.K. and Harley, J.B. A shared idiotype on anti-Ro/SSA autoantibodies. Abstracts of the Second International Symposium on Sjögren's syndrome, p. 28, 1988.

64. Harley, J.B., Reichlin, M., Sestak, A.S. and Lehman, T.J.A. Clinical studies of anti-Ro/SSA and anti-La/SSB autoantibodies. Abstracts of the Second International Symposium in Sjögren's Syndrome, p. 12, 1988.
65. Reichlin, M. and Harley, J.B. The autoimmune response to the Ro/SSA particle is directed to the human antigen. Abstracts of the Second International Symposium on Sjögren's Syndrome - 1988, p. 19, 1988.
66. Alexander, E.L., McNicholl, J.M., Bias, W.B., Harley, J.B., Reichlin, M. and Provost, T.T. Immunogenetic relationship between anti-Ro(SS-A) positive Sjögren's syndrome/lupus erythematosus patients (SS/SLE) and mothers of infants with neonatal lupus erythematosus (NLE). Abstracts of the Second International Symposium on Sjögren's Syndrome, p. 24, 1988.
67. Dickey, W.D., Jackson, K.W., Sanner, M.K., Deutscher, S.L., Keene, J.D. and Harley, J.B. Identification of an autoepitopean Ro/SSA. Abstracts of the Second International Symposium on Sjögren's Syndrome, p. 26, 1988.
68. Weiner, E.S., Lurer, T., Daniels, T. and Harley, J.B. Anti-Ro is associated with myositis and skin involvement in scleroderma. *Arthritis Rheum.* 32:R14, 1989.
69. Fujisaku, A., Harley, J.B., Frank, M.B., Gruner, B.L., Frazier, B. and Holers, V.M. Genomic organization and polymorphisms of the human C3D/Epstein-Barr virus receptor. *Arthritis Rheum.* 32:R30, 1989.
70. O'Brien, C.A. and Harley, J.B. Sequence and structure analysis of an hY RNA: a component of the Ro ribonucleoprotein. Abstracts of the Third Mid-America Molecular and Cellular Biology Colloquium, p. 55, 1988.
71. Dickey, W.D., Jackson, K., Sanner, M., Deutscher, S., Keene, J. and Harley, J.B. Western blot analysis of Ro/SSA peptides. Sixth Annual Texas Immunology Conference Abstracts, p. 8, 1988.
72. Fujisaku, A., Frank, M.B., Neas, B., Reichlin, M. and Harley, J.B. HLA-1 DQ restriction fragment length polymorphisms (RFLP) associated with anti-, Ro(SSA) antibodies in systemic lupus erythematosus (SLE). *Clin. Res.* 37:507A, 1989.
73. Dickey, W.D., Jackson, K.W., Deutscher, S.L., Keene, J.D. and Harley, J.B. A carboxy terminal autoepitope of Ro/SSA. *Clin. Res.* 37:488A, 1989.
74. O'Brien, C.A. and Harley, J.B. Sequence and structural analysis of the Ro RNA, hY4. *Arthritis Rheum.* 32:S128, 1989.
75. Fujisaku, A., Frank, M.B., Neas, B., Reichlin, M. and Harley, J.B. HLA-c DQ restriction fragment length polymorphisms (RFLP) associated with anti-A Ro (SSA) antibodies in systemic lupus erythematosus. *Arthritis Rheum.* 32:S81, 1989.
76. Gaither, K.K. and Harley, J.B. A shared idiotype on anti-Ro/SSA autoantibodies. *Arthritis Rheum.* 32:S23, 1989.

77. James, J.A., Dickey, D.D., Fujisaku, A., Deutscher, S.L., Keene, J.D. and Harley, J.B. Antigenicity of a recombinant Ro/SSA fusion protein. *Arthritis Rheum.* 32:S97, 1989.
78. Dickey, W.D., Jackson, K.W., Deutscher, S.L., Keene, J.D. and Harley, J.B. Identification of an autoepitope on Ro/SSA. *Arthritis Rheum.* 32:S26, 1989.
79. McArthur, R., Fujisaku, A., Harley, J. and Frank, B. T cell receptor restriction fragment length polymorphisms (RFLP) define a genetic component contributing to anti-Ro antibody response in SLE. *Arthritis Rheum.* 32:S121, 1989.
80. Fu, S.M., Reichlin, M., Gaskin, F. and Harley, J.B. Specificities of anti-Ro/SSA antibodies secreted by Epstein-Barr virus transformed B cell lines. *Clin. Res.* 37:587A, 1989.
81. McCarty, G.A., Harley, J.B. and Reichlin, M. A distinctive autoantibody profile in black female patients with lupus nephritis. *Clin. Res.* 37:510A, 1989.
82. Lehman, T.J.A., Reichlin, M., Santer, T.J., Scherman, E., Petty, R., Spencer, C. and Harley, J.B. Maternal antibodies to SSA/Ro correlate with both early age of onset and male sex in childhood SLE. *Clin. Res.* 37:509A, 1989.
83. Dickey, D.W., Scofield, H. and Harley, J.B. Transfer of human autoantibody producing cells to mice with severe combined immunodeficiency. Interns and Residents Day, University of Oklahoma Health Sciences Center, Abstracts, May 19, 1989.
84. McLay, C.J.L., Massicotte, H., Harley, J.B. and Bell, D.A. Generation of autoantibodies to Sm/U1RNP from normal human:human hybridomas. *Arthritis Rheum.* 32:S104, 1989.
85. Fujisaku, A., Frank, M.B., Neas, B., Reichlin, M. and Harley, J.B. Anti-Ro(SSA) antibodies are associated with HLA-DQ restriction fragment length polymorphisms (RFLP). Abstracts of the Seventh International Congress of Immunology, p. 485, 1989.
86. Harley, J.B., McArthur, R., Fujisaku, A., Neas, B. and Frank, M.B. Synergy between histocompatibility antigens and T cell receptor in the anti-Ro/SSA response of systemic lupus erythematosus. Programs and Abstracts of the Fifteenth Annual Meeting of the American Society for Histocompatibility and Immunogenetics, p. 57, 1989.
87. Frank, M.B., McArthur, R., Harley, J.B. and Fujisaku, A. Anti-Ro/SSA autoantibodies are associated with polymorphisms of the T cell receptor beta locus. Program and Abstracts of the Fifteenth Annual Meeting of the American Society of Histocompatibility and Immunogenetics, p. 72, 1989.
88. James, J.A., Dickey, D.A., Fujisaku, A., Deutscher, S.L., Keene, J.D. and Harley, J.B. Antigenicity of a recombinant Ro/SSA Fusion protein AOA Student Research Day Abstracts, p. 20, 1989.
89. Cunningham, M.W., Antone, S.M., Harley, J.B., Gauntt, C.J., McCormack, J.M. and Dell, V.A. Autoimmunity and Infection. Seventh Annual Texas Regional Immunology Conference Abstracts, p. 8, 1989.

90. Frank, B., McArthur, R. and Harley, J.B. T cell receptor beta RFLPs are associated with anti-Ro (SSA) autoantibody response in lupus patients. Seventh Annual Texas Regional Immunology Conference Abstracts, p. 7, 1989.
91. Cunningham, M.W., Ayoub, E.M., Harley, J.B. and McCormack, J.M. An anti-idiotypic antiserum to myosin specific antibodies recognizes an idiotype associated with acute rheumatic fever, systemic lupus erythematosus, and Sjögren's syndrome. Seventh Annual Texas Regional Immunology Conference Abstracts, p. 11, 1989.
92. O'Brien, C.A. and Harley J.B. Sequence and structure analysis of the hY4 Ro RNA. Seventh Annual Texas Regional Immunology Conference Abstracts, p. 1, 1989.
93. Harley, J.B., McArthur, R., Fujisaku, A., Neas, B. and Frank, M.B. Evidence of cooperation between histocompatibility antigens and T cell receptors in the anti-Ro/SSA response of systemic lupus erythematosus. Clin. Res. 37:905A, 1989.
94. McCarty, G.A., Lister, K.A., Kuzava, J., Harley, J.B. and McEver, R.P. Autoantibodies to phosphoproteins and endothelial cell granule membrane protein in lupus and normal patients with recurrent fetal loss. Clin. Res. 37:906A, 1989.
95. Mues, B., Harley, J.B., Hoover, M. and Frank, M.B. A T-cell receptor allele of the diversity region is associated with the absence of anti-, Ro/SSA autoantibodies in systemic lupus erythematosus. Clin. Res. 38:459A, 1990.
96. Dickey, W.D., Scofield, R.H. and Harley, J.B. Human autoantibody production in the severe combined immunodeficiency (SCID) mouse. Clin. Res. 38:407A, 1990.
97. Harley, J.B., McArthur, R., Fujisaku, A., Neas, B. and Frank, M.B. HLA-DQ gene complementation is synergistic with T cell receptor polymorphisms in the anti-Ro/SSA response of systemic lupus erythematosus. Clin. Res. 38:238A, 1990.
98. Scofield, R.H., Dickey, W.D., Jackson, R.W. and Harley, J.B. Localization of a small sequential autoepitope near the carboxyl terminus of 60 kD Ro/SSA in systemic lupus erythematosus. Clin. Res. 38:238A, 1990.
99. Scofield, R.H. and Harley, J.B. The autoantigenicity of human 60 kD Ro/SSA is related to homologies between Ro/SSA and the nucleocapsid protein of vesicular stomatitis virus. Clin. Res. 38:316A, 1990.
100. Karsh, J., Harley, J.B., Lazarovits, A.I. and Goldstein, R. Ro/SSA autoantigen inhibits the human autologous mixed lymphocyte reaction. Clin. Res. 38:403A, 1990.
101. Karsh, J., Harley, J.B., Lazarovits, A.I. and Goldstein, R. Ro/SSA autoantigen inhibits the human autologous mixed lymphocyte reaction. Submitted to the Northeast Region of the American College of Rheumatology, 1990.
102. Jacobsson, L., Hansen, B., Hardgrave, K., Harley, J.B. and Manthorpe, R. Anti-Ro/SS-A and -La/SS-B antibodies and their relation to subjective as well as objectively verified sicca

- symptoms. Results from a random sample of the general population. *Clin. Exp. Rheumatol.* in press, 1990.
103. O'Brien, C.A. and Harley, J.B. A subset of hY RNAs is associated with erythrocyte Ro RNPs. *FASEB J.* 4:A2297, 1990.
  104. Horsfall, A.C., Scofield, A.D., Farris, A.D. and Harley, J.B. Sequential epitopes of anti-La/SSB autoantibodies in complete congenital heart block. *FASEB J.* 4:A1703, 1990.
  105. Hardgrave, K.L., Harley, J.B., Hansen, B.U., Manthorpe, R. and Jacobsson, L. Anti-Ro/SSA antibodies are associated with subclinical sicca complex in random normals. *FASEB J.* 4:A2103, 1990.
  106. Scofield, R.H. and Harley, J.B. Autoepitopes of the human 60 kD Ro/SSA autoantigen in systemic lupus erythematosus. *FASEB J.* 4:A2103, 1990.
  107. Dickey, W.D., Scofield, R.H., Tateya, D. and Harley, J.B. Human autoantibody xenografts in severe combined immunodeficiency (scid) mice. *FASEB J.* 4:A2102, 1990.
  108. Cunningham, M.W., Fenderson, P.G., Harley, J.B., Ayoub, E.M. and McCormick, J.M. Acute rheumatic fever is associated with systemic lupus erythematosus and Sjögren's syndrome by an anti-myosin idiotype. Abstracts of the XI International Lancefield Symposium on Streptococci and Streptococcal Diseases, Siena, Italy, September 1990.
  109. Mues, B., Harley, J.B., Hoover, M. and Frank, M.B. T-cell receptor D $\beta$ 2 polymorphism of the anti-Ro/SSA autoantibody response in systemic lupus erythematosus. *Arthritis Rheum.* 33:S100, 1990.
  110. Scofield, R.H. and Harley, J.B. 60 kD Ro/SSA autoepitopes are found in regions of homology between Ro/SSA and the nucleocapsid protein of vesicular stomatitis virus. *Arthritis Rheum.* 33:S101, 1990.
  111. Scofield, R.H. and Harley, J.B. Autoepitopes of the human 60 kD Ro/SSA autoantigen in systemic lupus erythematosus. *Arthritis Rheum.* 33:S101, 1990.
  112. Lehman, T.J.A., Reichlin, M. and Harley, J.B. Familial concordance for antibodies to Ro/SSA among female relatives of children with systemic lupus erythematosus: Evidence for the 'supergene' hypothesis? *Arthritis Rheum.* 33:S124, 1990.
  113. Lehman, T.J.A., McCurdy, D.K., Spenser, C.H., Silverman, E.D. and Harley, J.B. Prognostic value of antibodies to Ro/SSA, La/SSB, and RNP in children with systemic lupus erythematosus (SLE). *Arthritis Rheum.* 33:S145, 1990.
  114. Horsfall, A.C., Farris, A.D., Scofield, R.H. and Harley, J.B. Sequential epitope of anti-La/SSB autoantibodies in complete congenital heart block. *Arthritis Rheum.* 33:S50, 1990.
  115. Hardgrave, K.L., Harley, J.B., Hansen, B.U., Monthorpe, R. and Jacobsson, L. Anti-Ro/SSA antibodies are associated with subclinical sicca complex in random normals. *Arthritis Rheum.* 33:S82, 1990.

116. Massicotte, H., Bell, D.A. and Harley, J.B. Binding properties of normal monoclonal anti-Ro(SS-A) antibodies. *Clin. Invest.* Med. 13:B129, 1990.
117. Jonsson, R., Harley, J.B., Lue, C., Mestecky, J. and Koopman, W. Local synthesis of immunoglobulins, Ro(SS-A) autoantibody and rheumatoid factor in Sjögren's syndrome. *Scand. J. Rheumatol.* in press, 1991.
118. Harley, J.B., McArthur, R., Fujisaku, A., Neas, B. and Frank, M.B. Cooperation between T cell receptors and HLA-DQ for anti-Ro/SSA in systemic lupus erythematosus. British Society for Immunology, 1991 Spring Meeting, Abstracts, p. 81, 1991.
119. Scofield, R.H. and Harley, J.B. 60 kD Ro/SSA autoepitopes are found in regions of homology between Ro/SSA and the nucleocapsid protein of vesicular stomatitis virus. British Society of Immunology Workshop: Epitope Mapping, Abstracts, p. 24, 1991.
120. Scofield, R.H., Dickey, W.D., Jackson, K.W. and Harley, J.B. The autoepitopes of the carboxyl terminus of human 60 kD Ro/SSA in systemic lupus erythematosus. British Society for Immunology Workshop: Epitope Mapping, Abstracts, p. 25, 1991.
121. Horsfall, A.C., Farris, A.D., Scofield, R.H. and Harley, J.B. Sequential epitopes of anti-La antibodies in complete congenital heart block. British Society for Immunology Workshop: Epitope Mapping, Abstracts, p. 26, 1991.
122. Scofield, R.H., Dickey, W.D., James, J.A. and Harley, J.B. Binding to an epitope of Ro/SSA. Oklahoma Housestaff Association Annual Meeting, Abstracts, May 1991.
123. Scofield, R.H. and Harley, J.B. Autoantigenicity of the human 60 kD Ro/SSA is related to short sequence identity between Ro/SSA and the vesicular stomatitis virus nucleocapsid protein. Oklahoma Housestaff Annual Meeting, Abstracts, May 1991.
124. Scofield, R.H., Hardgrave, K.L., Warren, W.L. and Harley, J.B. Immune response to the nucleocapsid protein of vesicular stomatitis virus. Oklahoma Housestaff Annual Meeting, Abstracts, May 1991.
125. James, J.A., Scofield, R.H. and Harley, J.B. Sequential epitopes of an Sm associated protein. *FASEB J.* 5:A642, 1991.
126. O'Brien, C.A. and Harley, J.B. Multiple hY-like sequences in the human genome and analysis of hY-4 pseudogenes. *FASEB J.* 5:A1532, 1991.
127. Lieu, T.-S., Harley, J.B., Craft, J., Capra, J.D. and Sontheimer, R.D. Molecular interaction between human calreticulin and the 60 kD Ro/SS-A autoantigen. *Clin. Res.* 39:322A, 1991.
128. Scofield, R.H. and Harley, J.B. Binding to an epitope of 60 kD Ro/SSA in systemic lupus erythematosus (SLE). *Clin. Res.* 39:311A, 1991.
129. O'Brien, C.A., Farris A.D. and Harley, J.B. Species analysis of Y-RNA like sequences. *Arthritis Rheum.* 34:S101, 1991.

130. O'Brien, C.A. and Harley, J.B. Southern blot analysis of Y RNA-like sequences in the human genome and hY4 pseudogenes. *Arthritis Rheum.* 34:S100, 1991.
131. James, J.A. and Harley; J.B. Sequential epitopes of an Sm B/B' protein. *Arthritis Rheum.* 34:S133, 1991.
132. Scofield, R.H., Hardgrave, K.L., Frank, M.B. and Harley, J.B. Human autoimmune response to an epitope of 60 kD Ro/SSA. *Arthritis Rheum.* 34:S51, 1991.
133. Scofield, R.H., Warren, W.L., Koelsch, G.R. and Harley, J.B. Multiple short sequence identities define a unique relationship between HLA B27.5 and Klebsiella pneumoniae nitrogenase. *Arthritis Rheum.* 34:S196, 1991.
134. Scofield, R.H., Astley, G.D., Dickey, W.D. and Harley, J.B. Evaluation of the clonotypic response to 60 kD Ro/SSA by affinity isoelectric focusing. *Arthritis Rheum.* 34:S102, 1991.
135. James, J.A. and Harley, J.B. Linear epitopes of an Sm B/B' protein. *Lupus* 1(1s):68, 1992.
136. James, J.A. and Harley, J.B. Sequential epitope mapping of the 70 kD nRNP associated proteins. *Lupus* 1(1s):67, 1992.
137. James, J.A. and Harley, J.B. Bonding regions of Sm B/B' monoclonal antibodies. *Lupus* 1(1s):129, 1992.
138. Scofield, R.H., Warren, W.L., Koelsch, G. and Harley, J.B. HLA-B27 and enteric Gram negative bacteria have undergone convergent evolution. *FASEB J.* 6:A1145, 1992.
139. James, J.A. and Harley, J.B. Linear antibody binding regions of the lupus associated Sm B/B' antigen. *Clin. Res.* 40:146A, 1992.
140. James, J.A. and Harley, J.B. Epitope mapping of the 70 kD nRNP associated protein. *Clin. Res.* 40:434A, 1992.
141. Scofield, R.H., Hardgrave, K.L., Frank, M.B. and Harley, J.B. Serologic and immunogenetic relationships of anti-Ro/SSA titer in systemic lupus erythematosus. *Clin. Res.* 40:360A, 1992.
142. Scofield, R.H., Warren, W.L., Koelsch, G. and Harley, J.B. Convergent evolution of HLA-B27 and enteric bacteria: potentially relevant to spondoloanthropathies. *Clin. Res.* 40:260A, 1992.
143. Huang, S.-C., Yu, H., Barber, B.D., Scofield, R.H. and Harley, J.B. Linear epitopes of Ro. *Arthritis Rheum.* 35:S171, 1992.
144. Huang, S.-C., Gross, T.F., Yu, H., Scofield, R.H. and Harley, J.B. Conformational epitopes of autoantigen Ro/SS-A. *Arthritis Rheum.* 35:S62, 1992.
145. James, J.A., Koelsch, G and Harley, J.B. Peptide bond structure and side chain specificities of two anti-Sm B/B' monoclonal antibodies. *Arthritis Rheum.* 35:S73, 1992.

146. James, J.A., Scofield, R.H. and Harley J.B. Basic amino acids predominate in the sequential autoantigenic determinants of the 70 kD peptide associated with the U1 ribonuclear particle. *Arthritis Rheum.* 35:S39, 1992.
147. Scofield, R.H., Dickey, W.D. and Harley, J.B. Autoantibody production in *scid*-SLE chimeric mice can be stimulated by recombinant IL-6 or purified autoantigen. *Arthritis Rheum.* 35:S50, 1992.
148. Hardgrave, K.L., Neas, B., Scofield, R.H. and Harley, J.B. Antibodies binding vesicular stomatitis virus proteins in systemic lupus erythematosus patients and normals. *Arthritis Rheum.* 35:S112, 1992.
149. Razenback, M., Kumor, A., Rosenbaum, A., Patronas, N., Harley, J., Reichlin, M. and Alexander, E.L. Anti-Ro (SS-A) autoantibodies (A-RoAb) in the immunopathogenesis of serious focal CNS disease in Sjögren's syndrome (CNS-SS). *Arthritis Rheum.* 35:S114, 1992.
150. Scofield R.H., Frank, M.B., Neas, B.R., Hardgrave, K.L., McArthur, R., Fujisaku, A. and Harley, J.B. Cooperative association of HLA-DQ and T cell receptor alleles for anti-Ro autoantibodies in systemic lupus erythematosus. *Clin. Res.* 40:741A, 1992.
151. Harley, J.B. Fine specificity of lupus humoral autoimmunity. *Clin. Res.* 40:626, 1992.
152. Farris, A.D., O'Brien, C.O. and Harley J.B. Sequence of a Y3 homologue in iguana. *Arthritis Rheum.* 35:S362, 1992.
153. Hulsey, M., Harley, J. and Reichlin, M. The 60 kD Ro/SSA protein contains disulfide bonds. *Arthritis Rheum.* 35:S297, 1992.
154. Scofield, R.H., Warren, W.L., Koelsch, G. and Harley, J.B. HLA-B27 contains a peptide which binds B27 and is mimicked by peptides from enteric bacteria which are also capable of binding B27. *Clin. Res.* 41:187A, 1993.
155. James, J.A. and Harley, J.B. Human lupus and MRL *lpr/lpr* sera share sequential autoantigenic determinants on the small ribonucleoprotein Sm D. *Clin. Res.* 41:246A, 1993.
156. James, J.A. and Harley, J.B. Anti-nRNP A autoantibodies bind constituent nRNP A peptides in two patterns and bind a neighboring set of surface structures. *Clin. Res.* 41:246A, 1993.
157. James, J.A. and Harley, J.B. Sequential fine specificity of the small nucleoribonuclear protein C. *Clin. Res.* 41:393A, 1993.
158. Karsh, J.R., Scofield, R.H. and Harley, J.B. Ro reactive T cells in systemic lupus erythematosus. *Arthritis Rheum.* 36:R34, 1993.
159. Huang, S.C., Koren, E. and Harley, J.B. Human recombinant monoclonal antibodies to 60 kD Ro autoantigen. *Arthritis Rheum.* 36:S66, 1993.

160. Scofield, R.H., Warren, W.L. and Harley, J.B. A nine amino acid peptide from the third hypervariable region of B27 is bound by B27 as are peptides from non-*E. coli* enteric bacteria that share sequence with this region of B27. *Arthritis Rheum.* 36:S73, 1993.
161. James, J.A. and Harley, J.B. Sequential autoantigenic determinants on the small ribonucleoprotein Sm D are shared by human lupus and MRL *lpr/lpr* sera. *Arthritis Rheum.* 36:S236, 1993.
162. James, J.A. and Harley, J.B. Sequential antigenic regions of human lupus sera with the small nucleoribonuclear protein C. *Arthritis Rheum.* 36:S236, 1993.
163. Farris, A.D. and Harley, J.A. The hY3 and hY4 homologues from iguana suggest conserved secondary structure solutions for Y3 and Y4 Ro RNAs. *FASEB J.* 8:A758, 1994.
164. Huang, S.C., Pam, Z., Harley, J.B. and Scofield R.H. Immunization with vesicular stomatitis virus nucleocapsid protein induces autoantibodies to 60 kD Ro. *Clin. Res.* 42:278A, 1994.
165. James, J.A., Gross, T. and Harley, J.B. Short peptide immunization induces lupus humoral autoimmunity and systemic disease. *Clin. Res.* 42:139A, 1994.
166. Huang, S.C., Pan, Z., Harley, J.B. and Scofield, R.H. Immunization with vesicular stomatitis virus nucleocapsid protein induces autoantibodies to 60 kD Ro. *Clin. Res.* 42:278A, 1994.
167. Scofield, R.H., Neas, B.R. and Harley, J.B. Logistic transmission models of ankylosing spondylitis and HLA B. *Am J. Hum. Genet.* 55:A950, 1994.
168. Neas, B.R. and Harley, J.B. Logistic transmission models of insulin dependent from GAW5 data. *Am. J. Hum. Genet.*, 55:A197, 1994.
169. Deveshwar, S., Neas, B.R., Sheldon, P., Moser, K. and Harley, J.B. Genetic linkage is present between rheumatoid arthritis and HLA-DR. *Arthritis Rheum.*, 37:S169, 1994.
170. Scofield, R.H., Huang, S-C., Pan, Z. and Harley, J.B. Induction of anti-Ro (SS-A) by immunization with viral nucleocapsid protein. *Arthritis Rheum.*, 37:S173, 1994.
171. Zhang, F., Kurien, B.T. Harley, J.B. and Scofield, R.H. Development of the humoral autoantibody response to 60 kD Ro in patients with systemic lupus erythematosus. *Arthritis Rheum.*, 37:S173, 1994.
172. Scofield, R.H., Kurien, B.T., James, J.A. and Harley, J.B. Immunization with short peptides from the 60 kD Ro sequence results in autoimmunity directed towards the Ro ribonucleoprotein complex. *Arthritis Rheum.*, 37:S202, 1994.
173. Kurien, B.T., Harley, J.B. and Scofield, R.H. A peptide from shigella toxin A that imitates HLA-B27 is bound by HLA-B27 as is a homologous peptide from *E. coli* Shiga-like toxin. *Arthritis Rheum.*, 37:S203, 1994.
174. James, J.A., Gross, T., Scofield, R.H. and Harley, J.B. Lupus humoral autoimmunity and systemic disease induced by short peptide immunization. *Arthritis Rheum.*, 37:S292, 1994.

175. James, J.A., Gross, T., Scofield, R.H. and Harley, J.B. Octapeptide immunized mice develop anti-spliceosomal autoantibodies. *Arthritis Rheum.*, 37:S292, 1994.
176. Arbuckle, M.R., James, J.A. and Harley, J.B. Temporal variation in the fine specificity of the human SLE anti-spliceosomal response. *Arthritis Rheum.*, 37:S315, 1994.
177. James, J.A. and Harley, J.B. Autoepitopes in systemic lupus erythematosus. *Arthritis Rheum.*, 37:S351, 1994.
178. Shaver, T.S., Sheldon, P., Moser, K., Neas, B.R. and Harley, J.B. Familial aggregation of lupus and autoimmunity in an unusual multiplex pedigree. *Arthritis Rheum.*, 37:S373, 1994.
179. Arbuckle, M.R., James, J.A. and Harley, J.B. Description of the initial targets of the antisspliceosomal response in a systemic lupus erythematosus patient. *AOA Student Research Day Reports*, 6:16, 1994
180. Farris, A.D., Gross, J.K. and Harley, J.B. Sequences and gene structures of mouse YRNAs, components of a conserved ribonucleoprotein. *AOA Student Research Day Reports*, 6:18, 1994
181. James, J.A., Gross, T., Scofield, R.H. and Harley, J.B. Lupus humoral autoimmunity and systemic disease are induced by short peptide immunization. *AOA Student Research Day Reports*, 6:21, 1994
182. Scofield, R.H., Henry, W.E., Kurien, B.T., James, J.A. and Harley, J.B. Induction of Ro and La autoimmunity by immunization with peptides from 60 kD Ro. *Clin. Res.* submitted, 1995.
183. James, J.A., Gross, T., Scofield, R.H. and Harley, J.B. Short peptide immunization induces lupus humoral autoimmunity and systemic disease. Submitted to Ninth International Congress of Immunology, San Francisco, submitted, 1995.
184. James, J.A. and Harley, J.B. Characterization of autoepitopes in systemic lupus erythematosus. Ninth International Congress of Immunology, San Francisco, submitted, 1995.
185. Farris, A.D., Koelsch G. and Harley, J.B. Phylogenetic analysis of Ro/SS-A associated Y1, Y3, and Y4 RNA sequences and secondary structures. Fourth International Conference on SLE, Jerusalem, Israel. *Lupus an International Journal*, 4;Suppl 2:156, 1995.
186. James, J.A. and Harley, J.B. Spliceosomal autoantigenic regions recognized by systemic lupus erythematosus patient sera. Fourth International Conference on SLE, Jerusalem, Israel. *Lupus an International Journal*, 4;Suppl 2:140, 1995.
187. Harley, J.B. Immune considerations for finding the lupus virus(es). Fourth International Conference on SLE, Jerusalem, Israel. *Lupus an International Journal*, 4;Suppl 2:61, 1995.
188. James J.A., Gross, T., Scofield, R.H. and Harley, J.B. Systemic lupus erythematosus induced by short peptide immunization. Fourth International Conference on SLE, Jerusalem, Israel. *Lupus an International Journal*, 4;Suppl 2:48, 1995.

189. Scofield, R.H., Henry, W.E., Kurien, B.T., James, J.A. and Harley, J.B. Induction of Ro and La autoimmunity by immunization with peptides from 60 kD Ro. *J. Invest. Med.* 53;Suppl 2:284A, 1995.
190. James, J.A., Gross, T. and Harley, J.B. Inbred mice strains differ in their capacity to develop spliceosomal autoimmunity after peptide immunization. *Arthritis Rheum.* 38:S226, 1995.
191. Arbuckle, M.R., Gross, T., Hinshaw, L., Harley, J.B. and James, J.A. Lupus humoral antibody induced by short peptide immunization in a baboon model. *Arthritis Rheum.* 38:S296, 1995.
192. Arbuckle, M.R., James, J.A. and Harley, J.B. Description of the initial targets of the anti-spliceosomal response in a systemic lupus erythematosus patient. *Arthritis Rheum.* 38:S296, 1995.
193. Farris, A.D., Puvion-Dutilleul, F., Puvion, E., Harley, J.B., Lee, L.A. The ultrastructural location of Ro protein and its associated Y RNAs. *J. Invest. Derm* 106, 862, 1996.
194. Kaufman, K.M., Scofield, R.H., Harley, J.B. Gram-negative bacterial peptides bind HLA-B27 inviro: a possible role in spondyloarthropathy pathogenesis. *FASEB J.* 10; A1476, 1996.
195. Scofield, R.H., Glass, G.N., Neas, B.R., and Harley, J.B. Ankylosing spondylitis is genetically linked to HLA-B by multiple alleles which influence disease risk. *Arthritis Rheum* 39:S121, 1996.
196. Kaufman, K.M., James, J.A., Harley, J.B. Anti-Sm sera recognize a recombinant protein derived from a SmB/B' alternative open reading frame. *Arthritis Rheum* 39:S180, 1996.
197. Kurien, B.T., Mehta, P., Gross, T., Harley, J.B., Scofield, R.H. Intramolecular interactions of 60 kD Ro/SSA. *Arthritis Rheum* 39:S181, 1996.
198. Kurien, B.T., Mehta, P., Kaufman, K.M., Gross, T., Gordon, T., Harley, J.B., Scofield, R.H. Protein-protein interaction between Ro 60 and La polypeptides using plasmon surface resonance. *Arthritis Rheum* 39:S181, 1996.
199. Scofield, R.H., Zhang, F-C, Kurien, B.T., Harley, J.B. 60 KD Ro/SSA multiple antigenic peptides reveal tertiary epitopes. *Arthritis Rheum* 39:S182, 1996.
200. James, J.A. and Harley, J.B. Preliminary genetic linkage of lupus autoimmune spreading with a polymorphic lymphocyte cell-surface antigen. *Arthritis Rheum* 39:S216, 1996.
201. Kaufman, K.M., Gross, J.K., Yu, D.T.Y., Harley, J.B., Scofield, R.H. In vivo binding of gram-negative bacterial peptides to HLA-B27: A possible relationship to anklyosing spondylitis pathogenesis. *Arthritis Rheum* 39:S298, 1996.
202. Farris, A.D., Harley, J.B., Reynolds, P., James, J.A., Scofield, R.H., McCluskey, J., Gordon, T.P. Induction of autoimmunity by multivalent immunodominant and subdominant T cell determinants of La (SS-B). *Arthritis Rheum* 39:S315, 1996.

203. Harley, J.B. Genetics analysis of rheumatic disease. Scientific program. American College of Rheumatology 60th National Scientific Meeting p 71, 1996.
204. Harley, J.B., Scofield, R.H., Moser, K.L., Neas, B.R. On estimating conditional penetrance from nuclear pedigree data. Am J. Hum Genet. 59; A179, 1996.
205. James, J.A., Gross, T., Harley, J.B. Short peptide immunization induces lupus humoral autoimmunity and systemic disease. Clin Res 44; 235A, 1996.
206. Scofield, R.H., Moser, K.L., Kendrick, D.L., Bruner, G.R., Avery, T.A. II, Neas, B.R., Harley, J.B. Genetic effects for the manifestations of systemic lupus erythematosus, a study of 30 multiplex families. Clin Res 44; 254A, 1996.
207. James, J.A., Harley, J.B. Induction of peptide induced lupus autoimmunity in inbred strains of mice. Clin Res 44; 297A, 1996.
208. James J.A., Gross T., Harley J.B. Short peptide immunization induces lupus humoral autoimmunity and systemic disease. Abstracts. Blymphocytes and Autoimmunity: A New York Academy of Sciences Conference. S20, 1996.
209. James J.A., Gross, T., Harley J.B. Induction of peptide induced lupus autoimmunity in inbred strains of mice. Abstracts. Blymphocytes and Autoimmunity: A New York Academy of Sciences Conference. P31, 1996.
210. Sanz I., del Rincon I., James J., Harley J., Fischbach. Fine epitope specificity of human anti-smith autoantibodies generated by phage-display libraries. Abstracts. Blymphocytes and Autoimmunity: A New York Academy of Sciences Conference. P54, 1996.
211. Scofield R.H., Harley J.B. Analysis of HLA-B allele frequencies in families with ankylosing spondylitis by Hardy-Weinburg equilibrium. J. Invest. Med. 45;200A, 1997.
212. Neas B.R., Moser K.M., Harley J.B. Logistic transmission modeling and genetic analysis. Abstracts of the 1997 Spring Meeting of the International Geometric Society ENAR 61:187, 1997.
213. Harley J.B. Genetic predisposition to autoimmunity. Scand. J. Immunol. 45;563, 1997.
214. Halse A.-K., Wahren M., Kroneld U., Harley J.B., Jonsson R. Levels of spontaneous anti-Ro/SS-A secreting cells in peripheral blood and salivary glands of Sjögren's syndrome patients. Scand. J. Immunol. 45:567, 1997.
216. Kaufman K.M., Baber U., Farris A.D., Kirby M., Harley J.B. Characterization of the murine 60 kD Ro gene. Submitted, 1997.
217. Arbuckle M.R., Harley J.B., James J.A. Anti-Sm B/B' antibodies in systemic lupus erythematosus patient sera initially target a repeated proline rich motif. Submitted, 1997.

218. James J.A., Kaufman K.M., Farris D.A., Taylor-Albert E., Lehman T.J.A., Harley J.B. An etiology for systemic lupus erythematosus. Submitted, 1997.
219. Farris A.D., McCluskey J., Reynolds P., Brown L., James J., Harley J.B., Gordon T.P. T-Helper cell interactions with multivalent determinants of La (SS-B). *Arthritis Rheum.* 40:S37, 1997.
220. Bruner G.R., Moser K.L., Bacino D.K., Yu H., Asundi N.R., McGuire C., Molloy A.R., Downer V.M., Hall T., Bozalis D., Ali I., Harley J.B. The Lupus Multiplex Registry and Repository (LMRR) is available for use by investigators. *Arthritis Rheum.* 40:S60, 1997.
221. Kaufman K.M., Baber U., Farris A.D., Kirby M.Y., Harley J.B. Characterization of the murine 60 KD Ro gene. *Arthritis Rheum.* 40:S82, 1997.
222. Ar buckle, M.R., Harley J.B., James J.A. Anti-Sm B/B' antibodies in systemic lupus erythematosus patient sera initially target a repeated proline rich motif. *Arthritis Rheum.* 40:S83, 1997.
223. Ford A.L., Kurien B.T., Harley J.B., Scofield R.H. Analysis of development of anti-centromere autoantibody in a patient evolving from a lupus/Sjögren's overlap to the crest variant of scleroderma. *Arthritis Rheum.* 40:S84, 1997.
224. James J.A., Kaufman K.M., Farris A.D., Taylor-Albert E., Lehman T.J.A., Harley J.B. An etiology for systemic lupus erythematosus. *Arthritis Rheum.* 40:S165, 1997.
225. Scofield R.H., Glass D.N., Harley J.B. An allele frequency analysis of HLA-B in families of patients with anklyosing spondylitis. *Arthritis Rheum.* 40:S227, 1997.
226. Moser K.L., Yu H., Asundi N., Koelsch G., Salmon J.E., Wallace D., Ginzler E.M., Wolf R.E., Bruner G., Neas B.R., Harley J.B. Evidence for racial differences in genetic linkage to multiple loci spanning chromosome 1q in human systemic lupus erythematosus (SLE). *Arthritis Rheum.* 40:S315, 1997.
227. Harley JB. Genetic predisposition to autoimmunity. *Scand J. Immunol.* 45;563, 1997.
228. Halse AK, Wahren M, Kroneld U, Harley JB, and Jonsson R. Levels of spontaneous anti-Ro/SSA secreting cells in peripheral blood and salivary glands of Sjögren's syndrome patients. *Scand. J.Immunol.* 45;567, 1997.
229. Kurien BT, Mehta P, Kaufman KM, Gross T, Gordon T, Harley JB, and Scofield RH. Protein-protein interaction between Ro 60 and La peptides using plasma surface resonance. Abstracts from Novel Perspectives in Systemic Lupus Erythematosus, Bethesda, MD, p.38, 1997.
230. Kaufman KM, Kurien BT, James JA, Harley JB, and Scofield RH. Immunization of mice with peptides from the human 60 kD Ro/SSA leads to autoimmunity targeting other ribonucleoproteins if the peptides are highly homologous to mouse Ro/SSA. Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.40, 1997.

## Curriculum Vitae

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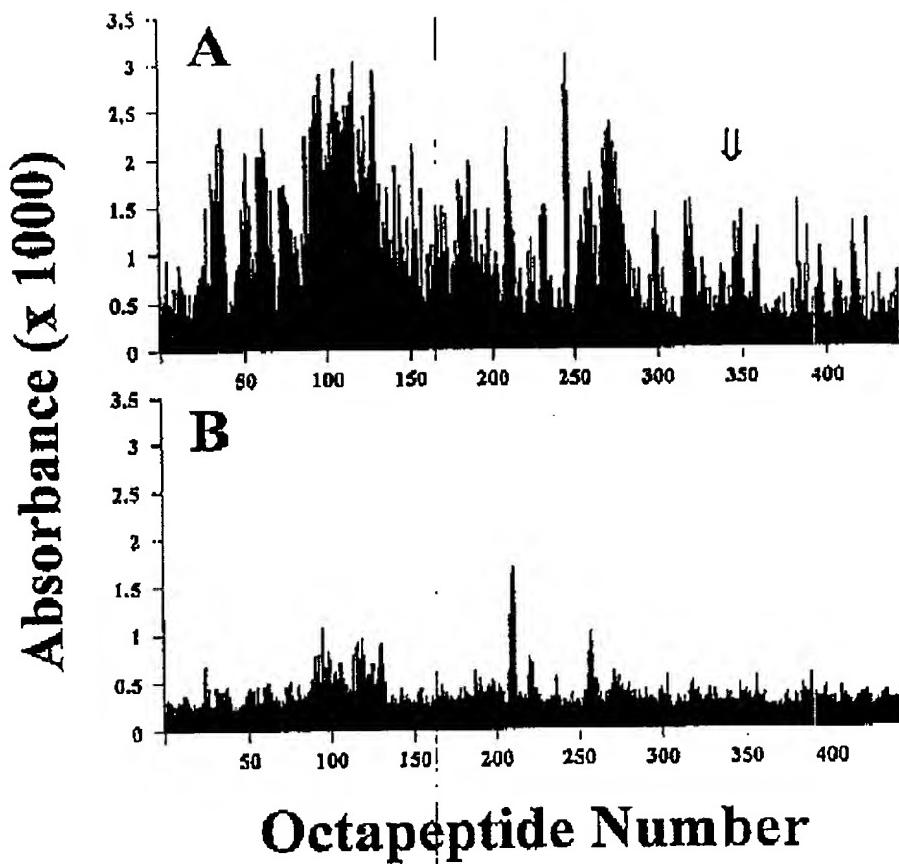
231. Scofield RH, Kurien BT, James JA, Kaufman KM, and Harley JB. Immunization with a peptide from 60 kD Ro/SSA results in spreading of the immune response in some but not all strains of mice. Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.41, 1997.
232. James JA, Gross T, and Harley JB. Peptide immunization with one common epitope of nRNP A, but not another, induces lupus autoimmunity. Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.42, 1997.
233. James JA, Kaufman KM, Farris AD, Taylor-Albert E, Lehman TJA, and Harley JB. An etiology for systemic lupus erythematosus. Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.43, 1997.
234. Schilling AR, Arbuckle MR, James JA, and Harley JB. An unusual anti-spliceosome autoimmune response is directed against a cross-reaction; proline-rich repeated motif in lupus sera. Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.44, 1997.
235. Arbuckle MR, James JA, and Harley JB. Anti-Sm B/B' antibodies in systemic lupus erythematosus patient sera mutually target a repeated proline-rich motif. Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.45, 1997.
236. Farris AD, McClusky J, Reynolds P, Brown L, James JA, Harley JB, and Gordon TP. T-helper cell interactions with multivalent determinants of La (SS-B). Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.46, 1997.
237. James JA and Harley JB. Genetic analysis of peptide-induced lupus autoimmunity using AKXL recombinant inbred mice. Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.82, 1997.
238. Moser KL, Neas BR, Yu H, Asundi N, Koelsch G, Salmon JE, Wallace D, Ginzler EM, Wolf RE, Bruner G, and Harley JB. Evidence for genetic linkage to multiple loci spawning chromosome 1q in human systemic lupus erythematosus (SLE). Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.83, 1997.
239. Bruner GR, Moser KL, Bacino DK, Yu H, Asundi N, McGuire C, Molloy AR, Downer VM, Hall T, Bozalis D, Ali I, and Harley JB. The lupus multiplex registry and repository is available for use by investigators. Abstracts from Novel Perspective in Systemic Lupus Erythematosus, Bethesda, MD, p.90, 1997.
240. Farris AD, McCluskey J, Reynolds P, Brown L, James J, Harley JB, and Gordon TP. T-helper cell interactions with multivalent determinants of La (SS-B). Arthritis Rheum 40:S37, 1997.
241. Bruner GR, Moser KL, Bacino DK, Yu H, Asundi N, McGuire C, Molloy AR, Downer VM, Hall T, Bozalis D, Ali I, and Harley JB. The lupus multiplex registry and repository is available for use by investigators. Arthritis Rheum 40:S60, 1997.

242. Kaufman KM, Baber U, Farris AD, Kirby MY, and Harley JB. Characterization of the murine 60 kD Ro gene. *Arthritis Rheum* 40;S82, 1997.
243. Arbuckle MR, Harley JB, and James JA. Anti-Sm B/B' antibodies in systemic lupus erythematosus patient sera initially target repeated proline rich motif. *Arthritis Rheum* 40;S83, 1997.
244. Ford AL, Kurien BT, Harley JB, and Scofield RH. Analysis of development of anti-centromere autoantibody in a patient evolving from a lupus/Sjögren's overlap to the crest variant of scleroderma. *Arthritis Rheum* 40;S84, 1997.
245. James JA, Kaufman KM, Farris AD, Taylor-Albert E, Lehman TJA, and Harley JB. An etiology for systemic lupus erythematosus. *Arthritis Rheum* 40;S165, 1997.
246. Scofield RH, Glass DN, and Harley JB. An allele frequency analysis of HLA-B in families of patients with anklyosing spondylitis. *Arthritis Rheum* 40;S227, 1997.
247. Moser KL, Yu H, Asundi N, Koelsch G, Salmon JE, Wallace D, Ginzler EM, Wolf RE, Bruner GR, Neas BR, and Harley JB. Evidence for racial differences in genetic linkage to multiple loci spanning chromosome 1q in human systemic lupus erythematosus (SLE). *Arthritis Rheum* 40;S315, 1997.
248. James JA, Gross TF, Davis AL, McClain MT, and Harley JB. Immunization with a common epitope of nRNP induces lupus autoimmunity. *FASEB J.* 12:A606, 1998.
249. Arbuckle MR, Harley JB, and James JA. Anti-Sm B/B' antibodies in SLE patient sera initially target PPPGMRPP. *FASEB J.* 12:A608, 1998.
250. Davis AL, McClain MT, Gross TF, Harley JB and James JA. Immunization with 60kD Ro leads to a diversified immune response to several lupus autoantigens. *FASEB J.* 12:A610, 1998.
251. McClain MT, Kaufman KM, Koelsch G, Harley JB, and James JA. Identification and analysis of peptide determinants of murine monoclonal anti-Sm B/B' autoantibodies. *FASEB J.* 12:A914, 1998.
252. Bruner GR, Moser KL, Johnson S, Filer T, Mauldin J, Bacino D, Ali I, and Harley JB. Characterization of 124 families multiplex for lupus. *Lupus* 7: Supplement 1:12, 1998.
253. Moser KL, Neas BR, Gruner G, Salmon J, Harley JB, and contributing physicians located elsewhere including Wallace D, Petri M, McKown K, Carson C, and Albert D. Scanning the genome for human SLE genes: design and candidate regions. *Lupus* 7: Supplement 1:13, 1998.
254. James JA, Kaufman KM, Farris AD, Taylor-Albert E, Lehman TJA, and Harley JB. A powerful association between Epstein-Barr virus and systemic lupus erythematosus. *Lupus* 7: Supplement 1:28, 1998.
255. Arbuckle MR, Harley JB, and James JA. Anti-Sm B/B' antibodies in SLE patient sera initially target the proline rich carboxyl terminus. *Lupus* 7: Supplement 1:116, 1998.

256. Kaufman KM, Kirby MY, James JA, and Harley JB. Peptide mimics of a major lupus epitope of Sm B/B'. *Arthritis Rheum*, Submitted 1998.
257. Kaufman KM, Baber U, Gross J, James JA, and Harley JB. Characterization of 60 kD Ro (SS-A) autoantigenicity. *Arthritis Rheum*, Submitted 1998.
258. Moser KL, Neas BR, Salmon JE, McGuire C, Yu H, Asundi N, Bruner GR, Kelly J, Henshall S, Fox J, Dietz M, Referring Physicians, and Harley JB. Regional genetic linkage analysis for the Fc<sub>y</sub>Receptor IIA candidate locus at chromosome 1q23 in human systemic lupus erythematosus. *Arthritis Rheum*, Submitted 1998.
259. Moser KL, Neas BR, Salmon JE, Yu H, McGuire C, Asundi N, Bruner GR, Fox J, Kelly J, Henshall S, Bacino D, Dietz M, Hogue R, Koelsch G, Nightingale L, Abdou H, Albert D, Carson C, Ginzler E, McKown K, Petri M, Ramsey-Goldman R, Treadwell E, Wallace D, Wilson J, Wolf R, Referring Physicians, Shaver T, James JA, and Harley JB. Genome scan of human systemic lupus erythematosus (SLE) identifies multiple loci influenced by racial origin. *Arthritis Rheum*, Submitted 1998.
260. Bruner GR, Moser KL, Bacino DK, McGuire C, Yu H, Asundi NR, Kelly J, Henshall S, Fox J, and Harley JB. Lupus multiplex registry and repository: genotypes and pedigrees. *Arthritis Rheum*, Submitted 1998.
261. James JA, Kendall JS, Davis AL, and Harley JB. Anti-Sm responses in pediatric systemic lupus erythematosus vary from those in adult patients. *Arthritis Rheum*, Submitted 1998.
262. James JA, Hall TJ, Sestak AL, Bruner GR, Moser KL, and Harley JB. Epstein-Barr virus exposure is associated with adult systemic lupus erythematosus. *Arthritis Rheum*, Submitted 1998.
263. McClain J, Kaufman KM, Harley JB, and James JA. Fine specificity mapping of the anti-Sm D3 autoimmune response in systemic lupus erythematosus. *Arthritis Rheum*, Submitted 1998.
264. James JA, Kaufman KM, and Harley JB. Epstein Barr virus Nuclear Antigen-1 immune response differences between systemic lupus erythematosus patients and normal controls. *Arthritis Rheum*, Submitted 1998.
265. Arbuckle MR, Schilling AR, Harley JB, and James JA. An unusual anti-spliceosomal autoimmune response in lupus is directed against a cross-reactive, proline-rich repeated motif. *Arthritis Rheum*, Submitted 1998.

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**Figure 1.** Binding of a rheumatoid factor positive RA patient serum (A) and a sex, race and age matched negative control (B) to the 443 unique overlapping octapeptides of EBNA-1. The RA patient mounts a very diversified response against EBNA-1. The normal control, on the other hand, has a much more limited response. Note the apparently identical responses binding peptides near peptide number 210 and 260 in both the normal and the RA patient. Meanwhile, the RA patient has anti-EBNA-1 antibodies against a number of peptides not bound by the normal. Among these are octapeptides numbered 344 to 347 (↑) which contain RLPFG which is crossreactive with collagen (122).

**D. Experimental Design and Methods.** The literature and our preliminary data as presented above leads us to suspect that the following model or scenario concerning RA is true. Because of genetic factors (e.g. HLA-DR4) some individuals have increased risk of becoming affected with RA. Some RA patients have an abortive infection of their synovium with EBV (2). These elements then are responsible for or predictive of the following: an association of EBV with RA (Table 6), humoral immune abnormalities in RA directed against EBV (Tables 1-6), the relative absence of specific anti-EBV T cell activity in the peripheral blood (failure to suppress transformed B cell outgrowth) of RA patients, and the concentration of anti-EBV early antigen T cell activity in RA synovium of some patients (43,62). The specific aims address this model of EBV in RA by seeking to develop the predicted observations.

